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Data Report: 1984 Bottom Trawl Survey of the Eastern Bering Sea Continental Shelf

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ABSTRACT

The Resource Assessment and Conservation Engineering Division of the Northwest and Alaska Fisheries Center conducts annual summer bottom trawl surveys to monitor the demersal fish and crab stocks of the eastern Bering Sea continental shelf. In 1984, as in each year since 1979, a major portion of the eastern Bering Sea shelf between the 20 m and the 200 m isobaths and from the Alaska Peninsula north to approximately the latitude of St. Matthew Island was surveyed. Samples were obtained by trawling for 30 minutes at the center of each square of a 20 X 20 nautical mile grid covering the survey area. Two vessels, the NOAA research vessel Chapman and the chartered trawler Alaska participated in the survey. Identical 83/112 eastern stern trawls were used by each vessel.

Survey results presented in this report include an inventory of fish species taken, estimates of the abundances of major fish and invertebrate groups and economically important fish species, geographic distributions of major fish families and economically important fish species, rank order of abundance of fish species in the overall survey area and in each of seven subareas, size composition of principal species, and age composition of walleye pollock (Theragra chalcogramma).

Detailed catch and station data and computer listings of the analyses of abundance estimates and biological characteristics of the sampled populations are provided in appendices.

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INTRODUCTION

The Resource Assessment and Conservation Engineering (RACE) Division of the Northwest and Alaska Fisheries Center (NWAFC) has conducted annual bottom trawl surveys to monitor the abundance, distributions, and population structures of eastern Bering Sea demersal fish and crab stocks since 1971. The information gathered is used to provide the North Pacific Fishery Management Council with annual fishery-independent estimates of abundance and biological condition of commercially exploited stocks, to provide distribution and abundance information to commercial fishermen, and to develop a time series data base contributing to our understanding of the population dynamics and interactions of groundfish species.

Early investigations of groundfish stocks in the eastern Bering Sea (1971-74) represented essentially an expansion of data collection during annual assessment surveys of red king crab (Paralithodes camtschatica) stocks in a limited area of the southeastern Bering Sea. The first large-scale NWAFC survey of the eastern Bering Sea shelf was conducted in 1975 under contract to the Bureau of Land management, in response to a need for baseline data to assess the potential impact of proposed offshore oil exploration and development on fishery resources (Pereya et al. 1976). During this baseline survey, sampling was conducted over the Bering Sea shelf between the 20 m and 200 m isobaths and from the Alaska Peninsula north to approximately 62° N lat. (Fig. 1). The survey region was stratified into seven subareas, with sampling density allocated on the basis of available information on the distribution patterns of economically important groundfish and invertebrates and on the locations of potential oil lease sites in Bristol Bay and the outer shelf region. Less extensive coverage of the shelf was obtained during annual surveys in succeeding years until 1979, when another comprehensive

survey of the Bering Sea shelf was undertaken in cooperation with the Japan Fisheries Agency (Bakkala and Wakabayashi 1985). The 1979 survey encompassed the entire region sampled in the 1975 baseline study, along with additional sampling in continental slope watersbetween the Aleutian Islands and the U.S.-U.S.S.R. convention line, and in the region between St. Matthew and St. Lawrence Islands (Fig. 2). A hydroacoustic survey was also conducted in 1979 to assess the midwater component of the walleye pollock (Theragra chalcogramma) population. Each annual bottom trawl survey since 1979 has essentially repeated the sample grid established during the 1975 baseline survey, with slight modifications each year. This region has been found to encompass the major part of the distributions of economically important Bering Sea groundfish species. Every third year (1979, 1982, 1985) an extended survey has been conducted, including hydroacoustic assessment of midwater pollock, bottom trawl sampling of the continental slope through the cooperation of the Japan Fisheries Agency, and bottom trawl sampling in the region between St. Matthew and St. Lawrence Islands.

This report describes the methods, used during the 1984 survey, in which only the baseline study area was sampled , and summarizes the information obtained for major groups of demersal fish and invertebrates and for individual species of economically important groundfish; data gathered on principal species of crabs are presented separately in a report by Otto et al. (1984).

SURVEY METHODS

Survey Area and Sampling Design

Sampling was conducted between 5 June and 27 August 1984. A systematic sample of the demersal fish and invertebrates of the shelf was obtained by trawling for 30 minutes at the center of each 20 x 20 nautical mile (nmi)

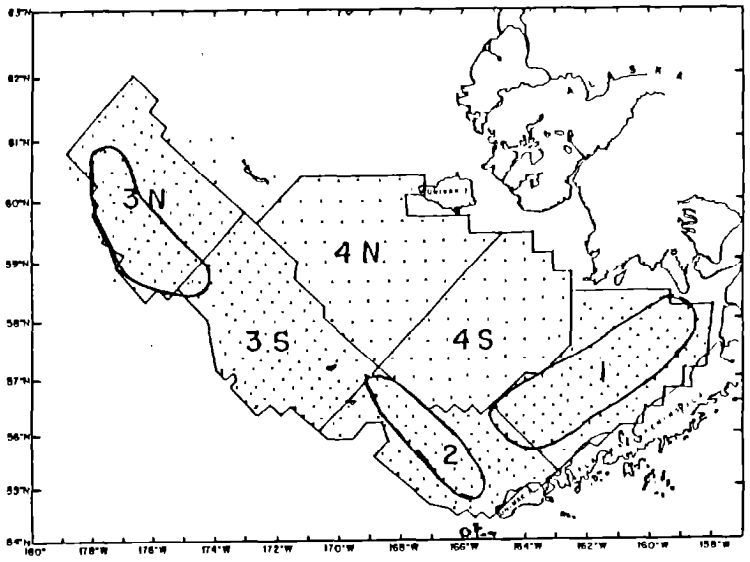

Figure 1. --Sampling stations and subareas of the 1975 baseline survey, with approximate locations of oil lease areas (from Pereya et al. 1976).

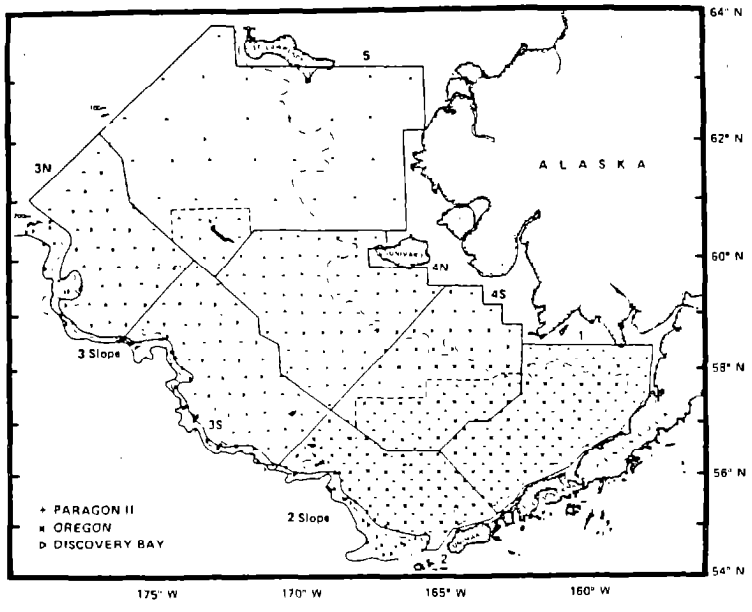

Figure 2. --Sampling stations and stratification of the 1979 expanded triennial survey (from Bakkala and Wakabayashi 1985).

grid block within the baseline survey area, resulting in a base sampling density of approximately one station per 400 nmi^2 (1,372 km^2). A total of 355 standard survey stations were sampled in 1984, with two vessels fishing alternate north/south rows of the station grid, and proceeding from Bristol Bay westward to the shelf break (Fig. 3). This alternate-row fishing pattern is used to facilitate fishing power comparsons between the two vessels.

The survey region was divided into seven subareas for analysis and reporting of biomass and population statistics; These subareas essentially follow the stratification established in the 1975 baseline survey. Additionally, sampling intensity was doubled in the vicinities of the Pribilof and St. Matthew Islands in order to increase coverage of blue king crab (Paralithodes platypus) stocks in these areas. Calculations were performed separately for the low and high density sections of each subarea, giving a total of 15 geographical strata for analytical purposes. Due to the high-density sampling regions and the irregular boundaries of the survey area, sampling density varied among subareas, ranging from 1,142 km^2 per station in subarea 5 to 1,413 km^2 per station in subarea 3N (Table 1).

Vessels and Fishing Gear

The 1984 survey was conducted aboard the 38.7 m NOAA research vessel Chapman and the 30.5 m trawler Alaska, chartered from the University of Washington (Table 2). Identical 83/112 eastern stern trawls, equipped with double 30 fathom dandylines and 24-inch footrope chain extensions to improve the net's ability to tend bottom, were used by each vessel (Table 3). Net mensuration studies conducted on this gear during the 1983 survey gave a mean path width of 16.54 m on the Chapman, and 16.41 m on the Alaska. A mean vertical opening of 2.3 m was observed for both vessels.

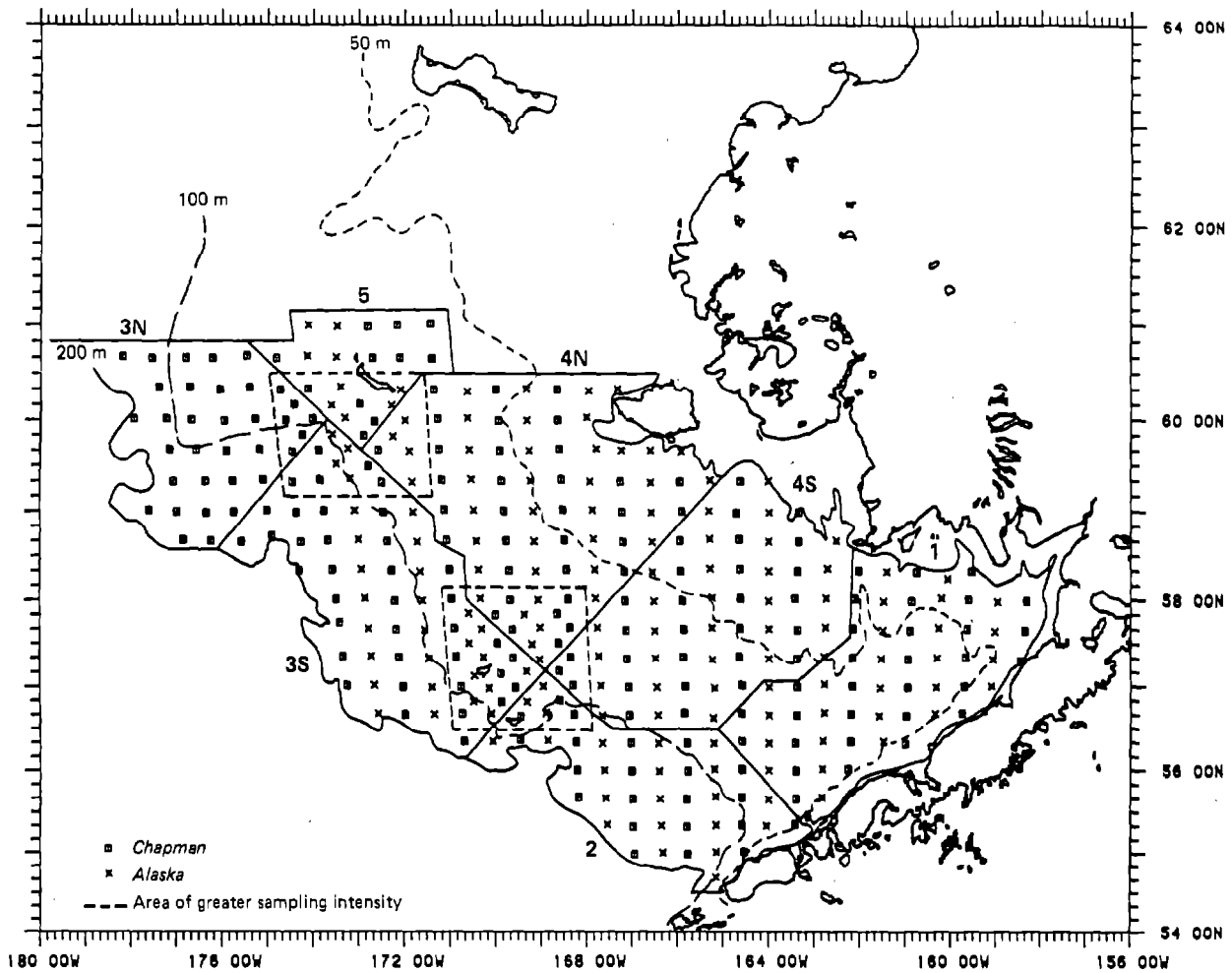

Figure 3.--Sampling stations included in the 1984 survey analysis. Solid lines indicate subarea boundaries; the two regions bounded by dashed lines were sampled at high density for increased coverage of blue king crab (Paralithodes platypus) stocks.

Table 1.--Size of subareas used during the 1984 bottom trawl survey and sampling densities by subarea (see also Fig. 1).

Subarea	Area (km^2)	Proportion of total area	Sampling density	
			No. Stns.	km^2/Stn.
1	78,717	0.169	57	1,381
2	60,882	0.131	44	1,384
3N	48,027	0.103	34	1,413
3S	80,941	0.174	67	1,208
4N	91,704	0.197	74	1,239
4S	81,526	0.175	59	1,382
5	22,850	0.049	20	1,142
Total Survey Area	464,647	1.000	355	1,309

Table 2.--Vessels participating in the 1984 bottom trawl survey.

Vessel	Overall Length (m)	Gross Tonnage	Shaft Horsepower	Survey Period Start	Survey Period Finish
Chapman	38.7	427	1,250	5 June	27 August
Alaska	30.5	219	600	5 June	12 August

Table 3.--Characteristics and dimensions of the 83-112 eastern stern trawl used during the 1984 survey.

Characteristics	Dimensions
Mean path width	16.5 m (Chapman) 16.4 m (Alaska)
Vertical opening	2.3 m
Headrope length	25.3 m
Footrope length	34.1 m
Mesh size	
Wing and body	102 mm
Belly and codend	89 mm
Codend liner	38 mm
Accessory gear	
Door width	1.8 m
Door length	2.7 m
Dandyline length	54.9 m
Chain extension	61 cm

Collection and Processing of Samples

Sampling procedures used in RACE eastern Bering Sea assessment surveys are described in detail by Wakabayashi et al. (1985). A brief summary will be given here.

Catches of less than approximately 2,500 lbs. (1,150 kg) were entirely processed; larger catches were weighed with a dynamometer and a subsample to be processed was taken from one side of the net--left or right as the net appears while fishing--in order to avoid any bias in the subsample that might result from vertical stratification of species within the codend (Hughes, 1976). Pacific halibut (Hippoglossus stenolepis) and crab species of the genera Paralithodes (red and blue king crabs), Chionocetes (Tanner crabs), and Erimacrus (hair crabs) were sampled at a rate of 100%, regardless of total catch size. The economically important fish and invertebrates in the catch (or subsample) were sorted to the species level in most cases. However, two Atheresthes species, A. stomias (arrowtooth flounder) and A. evermanni (Kamchatka flounder) were grouped as "arrowtooth flounder" due to the difficulty of differentiating these species in the field. Similarly, two species of Hippoglossoides, H. elassodon (flathead sole) and H. robustus (Bering flounder) were grouped as "flathead sole." Minor species of fish and invertebrates were sorted to the lowest taxonomic level practicable within time constraints of the survey. The catch of each species was entirely weighed and enumerated either by a complete count or by counting a weighed subsample. Weights and numbers of individuals from a subsampled catch were then expanded to the total catch.

Sex and size composition were determined for all commercially important species captured in significant numbers (100 or more fish) each haul (Table 4). For commercial species present. in large numbers, random subsamples of

Table 4.--Numbers of fish measured and age structures collected during the 1984 eastern Bering Sea groundfish survey.

Species	Number measured	Number of age structures collected
Walleye pollock	40,530	1,695
Yellowfin sole	38,385	820
Rock sole	22,261	462
Flathead sole	17,735	573
Alaska plaice	14,448	455
Pacific cod	13,733	689
Arrowtooth flounder	7,510	355
Pacific halibut	1,591	--
Greenland turbot	536	263
Pacific herring	296	302
Northern rockfish	117	--
Rex sole	96	--
Sablefish	53	--
Arctic cod	51	--
Total	157,342	5,614

approximately 200 individuals (300 in the case of pollock) were sexed and measured (to the nearest centimeter) from the tip of the snout to the end of the mid-caudal fin rays.

Age-structure samples, stratified by sex and length, were collected in both the northwestern and southeastern divisions of the survey area (Table 4). Dorsal fin rays were taken from Pacific cod (Gadus macrocephalus) for age determination, and scale scrapes from Pacific herring (Clupea harengus pallasi); otoliths were used for age determination in all other species. Ten structures per sex/centimeter interval were collected from pollock and yellowfin sole (Pleuronectes aspera); five structures per sex/centimeter interval were taken from all other major species.

Temperature profiles of the water column were obtained at each station by means of an expendable bathythermograph (XBT) or conductivity-salinity-temperature-depth (CSTD) instrument cast.

Data Analysis

The procedures used in analysis of RACE Bering Sea survey data will be described briefly. For a detailed description, the reader is referred to Wakabayashi et al. (1985).

Relative fishing powers of the two vessels were determined for each species by comparing the catch per unit effort values (CPUE, in kilograms per hectare trawled) obtained by each vessel in sampling an equal number of stations over the same general region of the survey area. All hauls on the standard survey grid that could be matched with a corresponding haul by the other vessel in an adjacent row were used in fishing power analysis, with the stipulation that pairs of hauls in which the bottom temperature recorded by one or both vessels was less than or equal to O°C were excluded due to differences expected in the distributions of groundfish across the zero-degree

isotherm: The need for a fishing power correction factor was assessed for each species by determining whether the distributions of CPUE values obtained by the two vessels were statistically equivalent, based on a method described by Geisser and Eddy (1979). In this procedure, a "discrepancy" statistic, D, is calculated for the CPUE values, first under the assumption that the CPUE distributions for the two vessels are indistinguishable (D_1), and second under the assumption of distinct distributions (D_2). If D_1 exceeded D_2 for a given species, the CPUE distributions obtained by the two vessels were considered statistically different. The vessel with the higher catch rate for that species was then assigned a fishing power of 1.0, and catch weights and numbers taken by the less efficient vessel were multiplied by a correction factor equal to the ratio of the CPUE value of the more efficient vessel to the CPUE value of the less efficient vessel.

Relative catch rates of each species, by subarea and for the overall survey area, were calculated as the mean CPUE in kilograms per hectare. Catch rates for each stratum were weighted by the stratum area and summed over strata to calculate the mean CPUE for each of the subareas and for the overall survey area. Standing stock (biomass) estimates were obtained for each stratum by multiplying the stratum mean CPUE by the stratum area. Stratum values were then summed to give biomass estimates for each subarea and for the total area. Population estimates were derived in an analogous manner, expanding mean number per hectare to obtain stratum estimates and summing stratum estimates to give subarea and total population estimates.

In estimating the length distributions of populations of principal species, relative length-frequency data obtained at each station were first expanded to give the number of fish (per hectare trawled) falling within each sex/centimeter interval at that station. These values were then summed over

all stations within the stratum for which length data was obtained, giving the estimated relative length frequency of the stratum population. These relative frequencies in turn were applied to the total stratum population estimate to obtain estimates of the numbers of fish in each size category in that stratum. Finally, stratum estimates were summed to give the estimated size composition of populations by subarea and for the overall survey area. Age composition was estimated by apportioning the computed population length distribution among ages according to age/length keys derived from the stratified samples of age-structures.

RESULTS

Station and Catch Data

The unadjusted catch weights (kg) of each species are listed by vessel, and haul number, along with the date, location, depth, duration, and distance of each tow, in Appendix A.

Environmental Conditions

Sea surface temperatures recorded during the 1984 survey ranged from 1.6°C to 10.1°C. Surface temperatures tended to increase from east to west across the shelf (Fig. 4), probably reflecting the warming of the surface water during the summer as the vessels proceeded from east to west during the survey. Bottom temperatures ranged from -1.8°C to 9.6°C. The warmest bottom temperatures (above 6°C) were observed in shallow waters near the Alaska coastline (Fig. 5). Bottom water over most of the shelf fell within a range of from O°C to 4°C, although a cold bottom water mass less than O°C was observed extending south and east from the vicinity of St. Matthew Island. Comparison of annual mean bottom temperatures observed in a region of the southeastern Bering Sea that has been sampled consistently since 1972 (Fig. 6)

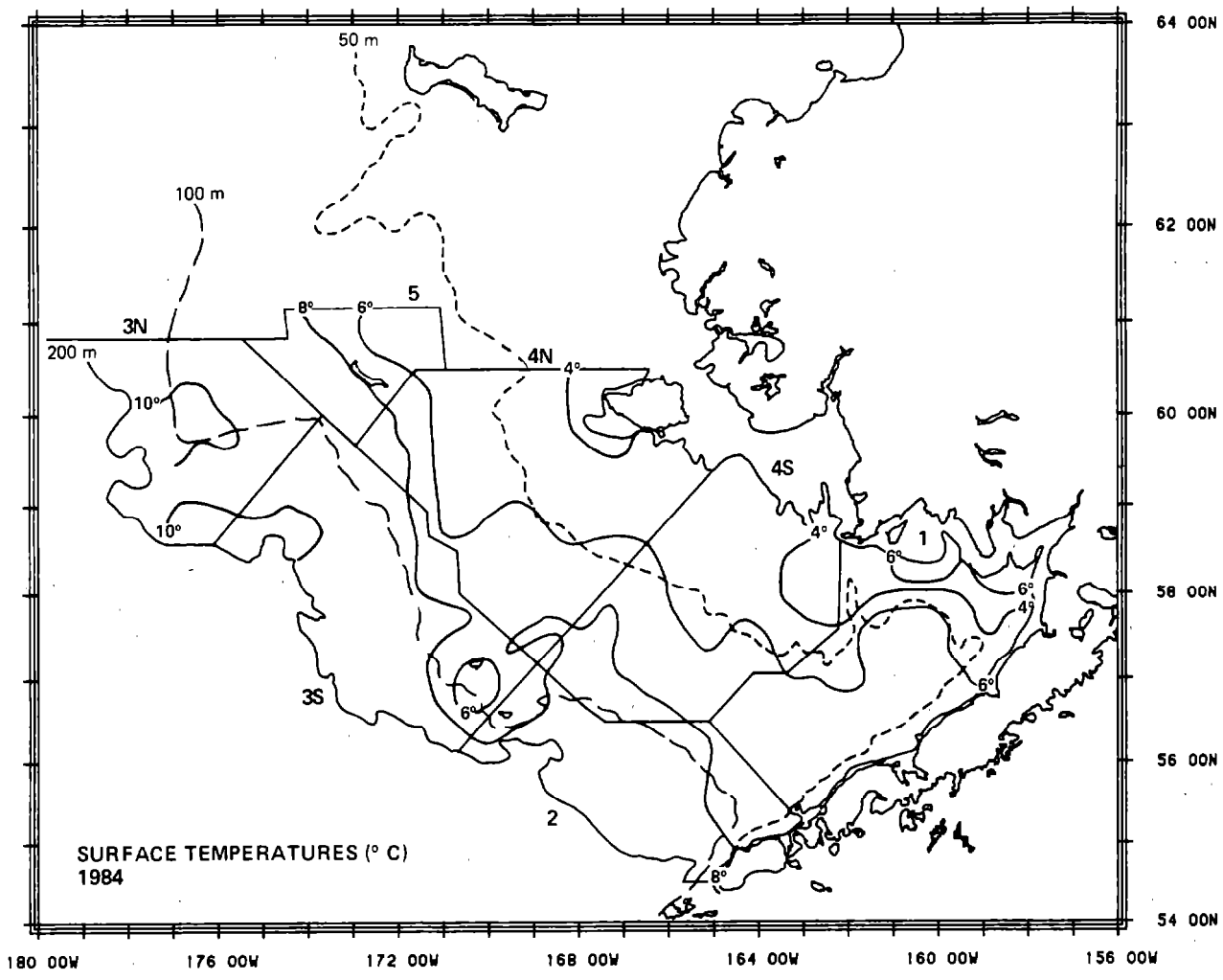

Figure 4. --Distribution of surface water temperatures observed during the 1984 survey.

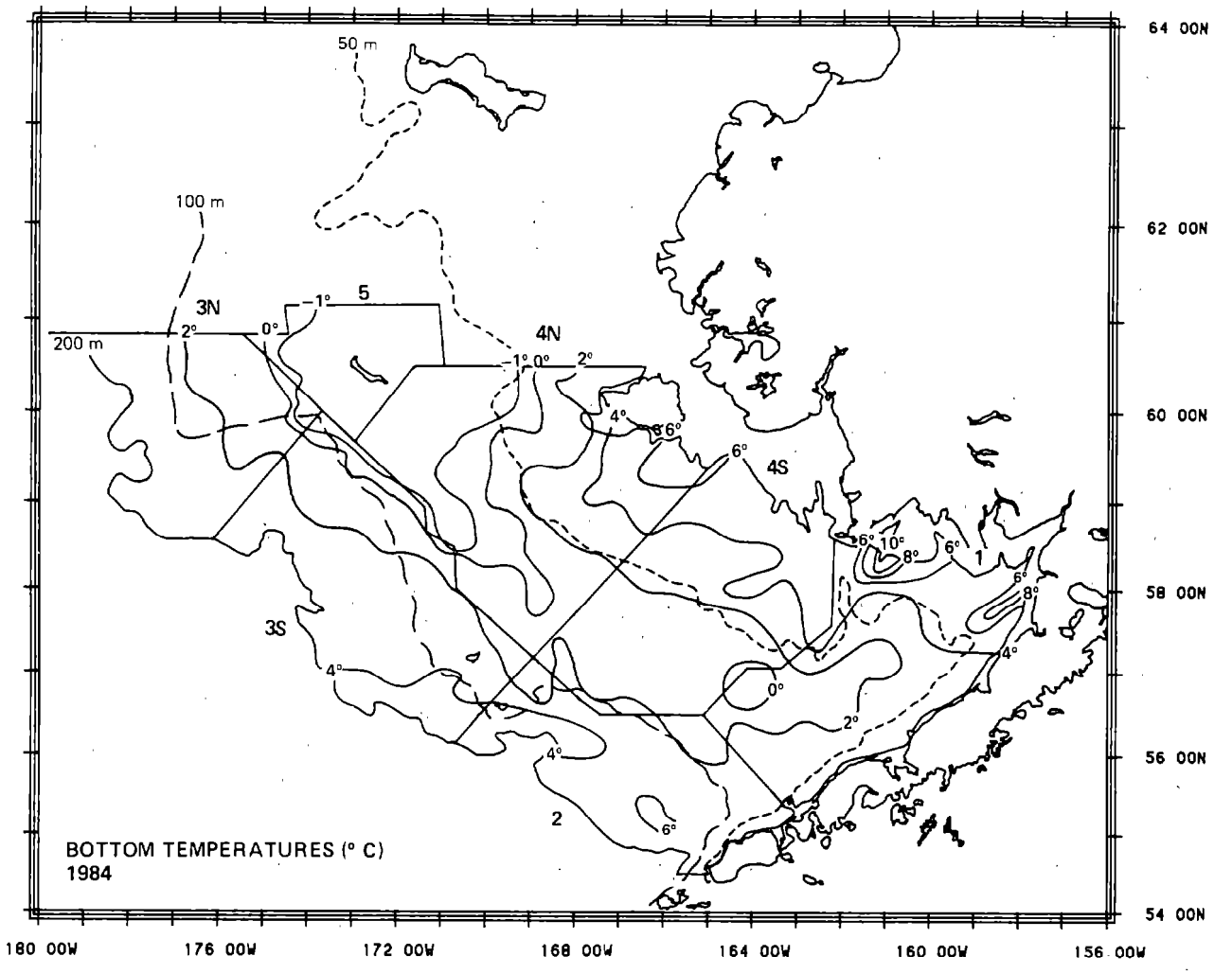

Figure 5.--Distribution of bottom water temperatures observed during the 1984 survey.

indicates the variability of summer temperature conditions of near-bottom waters on the eastern Bering Sea shelf (Fig. 7). Mean bottom temperatures observed for this area during annual summer surveys have ranged from 1.2°C to 4.8°C; in 1984, a mean of 3.1°C was observed, a value at approximately the middle of this range.

Relative Fishing Powers of the Participating Vessels

In preliminary analysis of the 1984 data, unusually large differences in the estimated fishing powers of the two vessels were obtained for a number of groundfish species. The observed differences were believed to result from a tendency of these species to avoid the cold bottom water mass extending southeast from St. Matthew Island, rather than to reflect true differences in vessel fishing power. All pairs of tows in which one or both of the vessels encountered bottom temperatures of O°C or less were therefore excluded from final fishing power analysis for 1984. A total of 244 tows, 122 for each vessel, were used for statistical comparison of mean catch rates and in calculations of relative fishing power (Fig. 8).

Comparison of "discrepancy" statistics (Geisser and Eddy 1979) indicated that the Alaska was significantly more efficient at capturing yellowfin sole, rock sole (Pleuronectes bilineata), flathead sole (including Bering flounder), poachers (all species combined), and shrimps (all species combined) than was the Chapman. Fishing power correction coefficients were therefore applied to catches of these species by the Chapman in order to standardize them to the higher catch rates obtained by the Alaska (Table 5). The Chapman captured sablefish (Anaplopoma fimbria) at a much higher rate than did the Alaska; however, no correction factor was applied because sablefish were encountered in very few tows, and the sample size was considered insufficient for a valid comparison of fishing power.

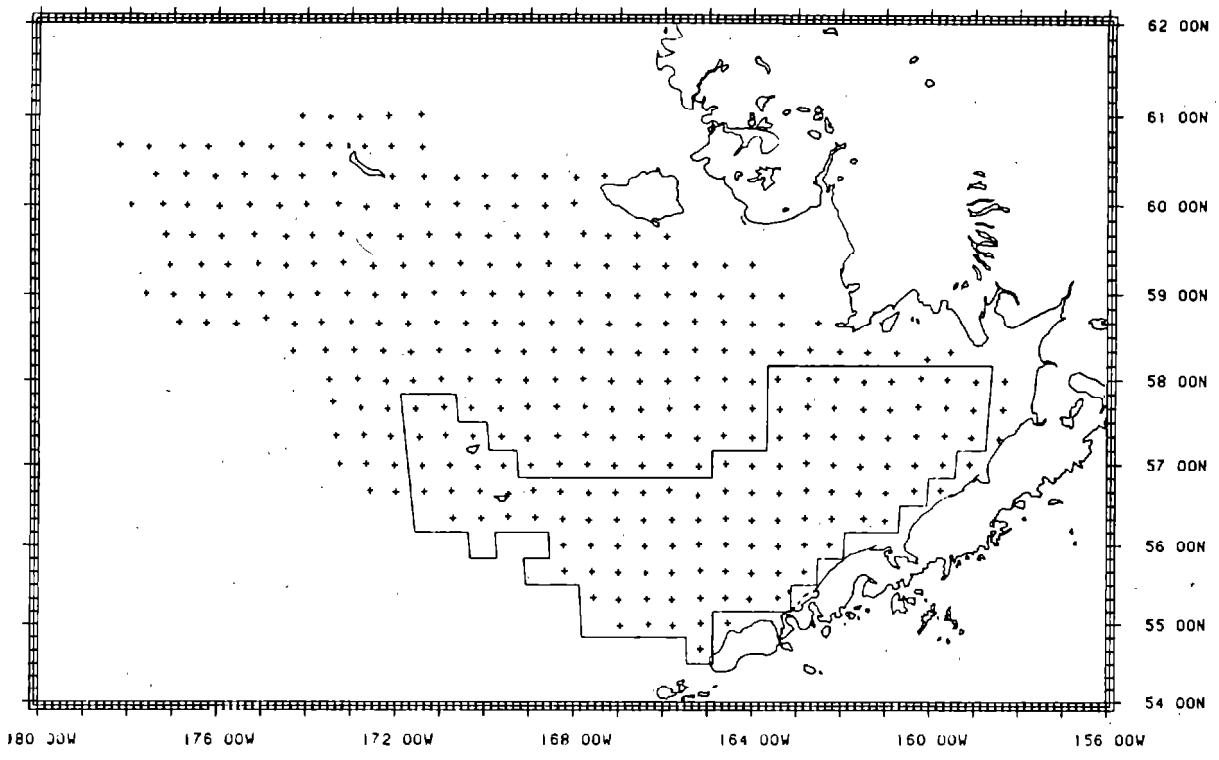

Figure 6.--Portion of the Bering Sea survey area that has been sampled annually since 1972. Sampling stations falling within this area were used in calculation of mean summer bottom water temperatures (Fig. 7).

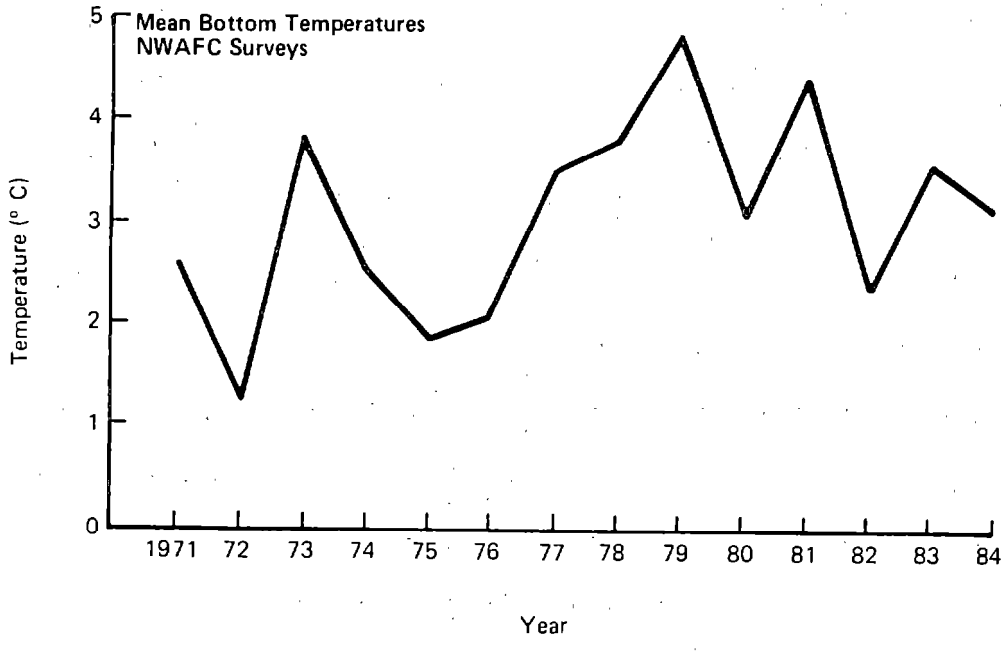

Figure 7.--Mean summer bottom water temperature in the southeastern Bering Sea 1972-84, based on Northwest and Alaska Fisheries Center annual survey data.

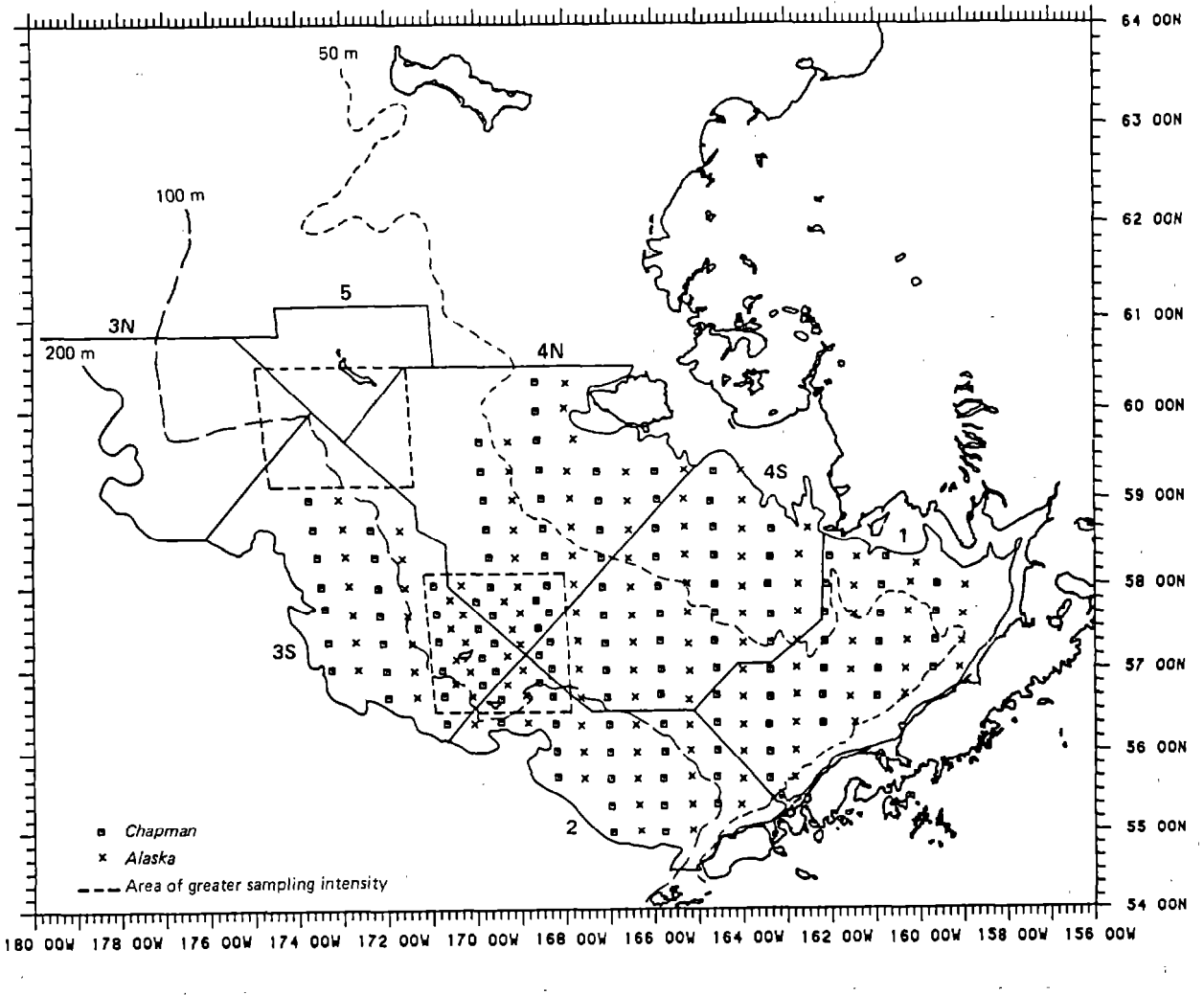

Figure 8. --1984 survey stations included in fishing power analysis.

Table 5.--Comparison of mean catch rates of major species and species groups taken by the Chapman and Alaska using the alternate row fishing method to measure relative fishing powers between vessels.[a]

Species	Mean catch rates (kg/ha)		Ratio of catch rates
	Chapman	Alaska	Chapman/Alaska
Walleye pollock	93.23	80.25	1.16
Pacific cod	19.36	16.70	1.16
Sablefish	0.35	0.01	29.61
Pacific ocean perch	<0.01	--	--
Pacific herring	0.18	0.25	0.71
Yellowfin sole	73.70	93.68	0.79[b]
Rock sole	18.23	27.95	0.65[b]
Flathead sole[c]	5.39	7.27	0.74[b]
Alaska plaice	15.47	17.20	0.90
Greenland turbot	0.09	0.07	1.26
Arrowtooth flounder[c]	4.85	3.39	1.43
Pacific halibut	2.36	2.37	0.99
Other flounders	0.74	1.13	0.65
Smelts	0.28	0.21	1.34
Sculpins	4.44	4.37	1.02
Snailfishes	0.01	<0.01	2.81
Poachers	0.11	0.25	0.43[b]
Eelpouts	0.23	0.19	1.23
Skates	3.85	4.84	0.80
Other fish	0.04	0.04	1.06
Shrimp (total)	0.01	0.02	0.31[b]

[a]Comparisons based on 122 stations sampled by each vessel in alternate rows.

[b]Analysis of Geisser and Eddy (1979) "discrepancy" statistics indicated that CPUE value. distributions for the two vessels were not statistically equivalent ($D_1 > D_2$). Fishing power correction factors were applied to standardize the Chapman catch rate to that of the Alaska.

[c]"Flathead sole" includes Bering flounder; "Arrowtooth flounder" includes Kamchatka flounder.

Overall Abundance of Major Fish and Invertebrate Groups and Distribution of Fish Groups

A total of 82 species of fish, representing 20 families, were encountered during the 1984 survey (Table 6). The estimated abundances of major fish and invertebrate taxa are summarized by subarea in Tables 7 and 8. A biomass of 14.2 million metric tons (t) was estimated for the total survey area; fish species accounted for 84% (11.8 million t) of the total biomass and invertebrates made up 16% (2.3 million t). Fish species in two families--Gadidae (cods) and Pleuronectidae (flatfishes)--constituted 96% of the total estimated fish biomass. Total gadid biomass was estimated at 5.6 million t, 4.6 million t of which consisted of pollock. Total pleuronectid biomass was estimated to be 5.7 million t, primarily yellowfin sole. Grab species accounted for 34% of the estimated invertebrate biomass, asteriod starfish for 27%, and snails for 18%. Distributions of total fish and major fish families (cods, flounders, sculpins, skates, eelpouts, smelts, poachers, and snailfish) are illustrated in Figures 9-17. The greatest concentrations of total demersal fish biomass (400-2000 kg/ha) were located in Bristol Bay, along the north side of the Alaska Peninsula, and in scattered dense patches along the outer shelf (>100 m depth) (Fig. 9). This distribution largely reflects the abundance patterns of cods, which were distributed primarily along the outer shelf and north of the Alaska Peninsula in concentrations of up to 2,000 kg/ha (Fig. 10) and of flatfish, which were abundant throughout the inner (<50 m depth) and middle shelf (50-100 m depth) regions with concentrations of 200-900 kg/ha found in. Bristol Bay and the middle shelf (Fig. 11).

Table 6.--List of fish species taken during the 1984 bottom trawl survey.

Family and species[a]	Common Name
Rajidae	
Unidentified Rajidae	Skate
Bathyraja abyssicola[b]	Deepsea skate
Bathyraja aleutica[b]	Aleutian skate
Bathyraja interrupta[b]	Bering skate
Bathyraja parmifera[b]	Alaska skate
Raja binoculata	Big skate
Raja stellulata	Starry skate
Clupeidae	
Clupea pallasii[b]	Pacific herring
Salmonidae	
Oncorhynchus keta	Chum salmon
Osmeridae	
Osmerus mordax	Rainbow smelt
Mallotus villosus	Capelin
Thaleichthys pacificus	Eulachon
Gadidae	
Boreogadus saida	Arctic cod
Eleginus gracilis	Saffron cod
Gadus macrocephalus	Pacific cod
Theragra chalcogramma	Walleye pollock
Zoarcidae	
Lycodes brevipes	Shortfin eelpout
Lycodes palearis	Wattled eelpout
Lycodes raridens[c]	Marbled eelpout
Lycodes turneri	Polar eelpout

Table 6.--Continued.

Family and species	Common Name
Scorpaenidae	
Sebastes sp.	Rockfish unidentified
Sebastes alutus	Pacific ocean perch
Sebastes polyspinis	Northern rockfish
Sebastes variegatus	Harlequin rockfish
Hexagrammidae	
Unidentified Hexagrammidae	Greenling
Hexagrammos decagrammus	Kelp greenling
Hexagrammos stelleri	Whitespotted greenling
Pleurogrammus monopterygius	Atka mackerel
Anoplopomatidae	
Anoplopoma fimbria	Sablefish
Cottidae	
Unidentified Cottidae	Sculpin
Dasycottus setiger	Spinyhead sculpin
Gymnocanthus sp.	Sculpin unidentified
Gymnocanthus galeatus	Armorhead sculpin
Gymnocanthus pistilliger[d]	Threaded sculpin
Gymnocanthus tricuspis	Arctic staghorn sculpin
Hemilepidotus jordani	Yellow Irish lord
Hemitripterus bolini	Bigmouth sculpin
Icelus sp.	Sculpin unidentified
Icelus spatula	Spatulate sculpin
Icelus spiniger	Thorny sculpin
Leptocottus armatus	Pacific staghorn sculpin
Malacocottus kincaidi	Blackfin sculpin
Melletes papilio	Butterfly sculpin
Myoxocephalus sp.	Sculpin unidentified
Myoxocephalus jaok	Plain sculpin
Myoxocephalus polyacanthocephalus	Great sculpin
Myoxocephalus verrucosus[d]	Warty sculpin
Triglops sp.	Sculpin unidentified
Triglops forficata	Scissortail sculpin
Triglops pingeli	Ribbed sculpin
Triglops scepticus	Spectacled sculpin

Table 6. --Continued.

Family and species	Common Name
Agonidae	
Unidentified Agonidae	Poacher
Acipenserinus	Sturgeon poacher
Anoplagonus inermis	Smooth alligatorfish
Aspidophoroides bartoni	Aleutian alligatorfish
Bathyagonus alascanus	Gray starsnout
Bathyagonus infraspinatus	Spinycheek starsnout
Occella dodecaedron	Bering poacher
Occella verrucosa	Warty poacher
Pallasina barbata	Tubenose poacher
Sarritor frenatus	Sawback poacher
Cyclopteridae	
Unidentified Cyclopteridae	Snailfish
Aptocyclus ventricosus	Smooth lumpsucker
Careproctus rastrinus[d]	Salmon snailfish
Careproctus scottae[c]	Scott's snailfish
Eumicrotremus orbis	Pacific spiny lumpsucker
Liparis sp.	Snailfish unidentified
Liparis dennyi	Marbled snailfish
Liparis gibbus[b]	Dusky snailfish
Trichodontidae	
Trichodon trichodon	Pacific sandfish
Bathymasteridae	
Bathymaster signatus	Searcher
Anarhichadidae	
Anarhichas orientalis	Bering wolffish
Anarrhichthys ocellatus	Wolf-eel
Stichaeidae	
Lumpenus maculatus[b]	Daubed shanny
Lumpenus sagitta	Snake prickleback
Stichaeus punctatus	Arctic shanny

Table 6.--Continued.

Family and Species	Common Name
Zaproridae	
Zaprora silenus	Prowfish
Ammodytidae	
Ammodytes hexapterus	Pacific sand lance
Bothidae	
Citharicthys sordidus	Pacific sanddab
Pleuronectidae	
Atheresthes evermanni	Kamchatka flounder
Atheresthes stomias	Arrowtooth flounder
Errex zachirus[e]	Rex sole
Hippoglossoides robustus	Bering flounder
Hippoglossoides elassodon	Flathead sole
Hippoglossus stenolepis	Pacific halibut
Platichthys stellatus	Starry flounder
Pleuronectes aspera[e]	Yellowfin sole
Pleuronectes bilineata[e]	Rock sole
Pleuronectes isolepis[e]	Butter sole
Pleuronectes proboscidea[e]	Longhead dab
Pleuronectes quadrituberculatus	Alaska plaice
Pleuronectes sakhalinensis[e]	Sakhalin sole
Reinhardtius hippoglossoides[c]	Greenland turbot

[a]Nomenclature from Robins (1980) unless otherwise noted.

[b]Nomenclature from Eschmeyer, Herald and Hamman (1983).

[c]Nomenclature from Kessler (1985).

[d]Nomenclature from Quast and Hall (1972).

[e]Nomenclature from Sakamoto (1984).

Table 7.--Summary of apparent biomasses of major fish species and fish groups taken during the 1984 bottom trawl survey.

Taxon	Estimated biomass (with 95% confidence interval) for total survey area (t)[a]	Proportion of total biomass[b]	Estimated biomass by subarea (t)						
			1	2	3N	3S	4N	4S	5
Gadidae (cods)									
Walleye pollock	4,585,324 ± 904,300	0.324	1,013,613	1,154,448	836,205	1,292,998	79,070	201,382	7,608
Pacific cod	999,588 ± 126,795	0.071	224,503	79,578	187,107	265,921	127,012	109,514	5,954
Other cods	2,200 ± 1,575	<0.001	0	0	0	0	1,519	440	241
Total cods	5,587,112 ± 940,890	0.394	1,238,116	1,234,025	1,023,312	1,558,918	207,601	311,336	13,802
Pleuronectidae (flatfishes)									
Yellowfin sole	3,365,281 ± 393,932	0.238	1,045,447	97,972	144	88,087	924,944	1,198,763	9,924
Rock sole	967,279 ± 171,496	0.068	583,894	65,530	1,837	104,125	51,512	159,967	414
Flathead sole	340,865 ± 59,962	0.024	61,816	120,398	55,333	65,338	11,754	21,632	4,595
Alaska plaice	726,846 ± 195,201	0.051	72,394	18,466	445	53,465	384,804	163,199	34,073
Arrowtooth flounder	182,877 ± 44,276	0.013	1,798	110,398	18,249	50,528	22	1,882	0
Greenland turbot	17,901 ± 4,717	0.001	0	892	13,126	3,645	160	12	66
Pacific halibut	90,006 ± 20,804	0.006	31,917	20,741	3,465	21,642	4,912	7,245	84
Other flatfish	52,122 ± 13,710	0.004	20,134	10,817	25	3,190	5,887	11,940	129
Total flatfish	5,743,178 ± 530,046	0.405	1,817,399	445,214	92,623	390,022	1,383,995	1,564,640	49,286
Anoplopomatidae (sablefish)	9,226 ± 6,892	0.001	16	5,900	0	3,310	0	0	0
Clupeidae (Pacific herring)	15,795 ± 12,457	0.001	10,422	600	87	600	2,208	908	971
Cottidae (sculpins)	236,991 ± 56,525	0.017	14,376	24,773	4,756	46,976	58,172	24,565	63,373
Zoarcidae (eelpouts)	30,880 ± 11,298	0.002	573	2,189	4,003	8,379	12,682	439	2,616
Osmeridae (smelts)	9,960 ± 5,255	0.001	328	7,252	0	9	1,054	868	450
Agonidae (poachers)	9,287 ± 2,270	0.001	2,563	673	19	867	3,888	1,272	4
Scorpaenidae (rockfish)									
Pacific ocean perch	4 ± 9	<0.001	0	4	0	0	0	0	0
Other rockfish	3,035 ± 6,077	<0.001	0	3,016	0	18	0	0	0
Total rockfish	3,039 ± 6,086	<0.001	0	3,021	0	18	0	0	0
Cyclopteridae (snailfish)	712 ± 400	<0.001	4	7	104	149	145	53	250
Rajidae (skates)	187,721 ± 29,369	0.013	16,069	65,456	20,119	59,617	10,004	14,859	1,598
Other fish	9,584 ± 6,110	0.001	288	5,560	171	2,613	705	224	24
Total fish	11,843,485 ± 1,043,326	0.836	3,100,153	1,794,674	1,145,195	2,071,478	1,680,453	1,919,161	132,374

[a] Rounding accounts for minor discrepancies between sums of subareas and total survey area, and between sums of taxonomic subgroups and major groups.

[b] Proportion of total estimated biomass, fish and invertebrates combined, for the total survey area. Total estimated biomass = 14,167,101 t.

Table 8.--Summary of apparent biomasses of major invertebrate taxonomic groups taken during the 1984 bottom trawl survey.

Taxon	Estimated biomass (with 95% confidence interval) for total survey area (t)			Proportion of total biomass	Estimated biomass by subarea (t)						
					1	2	3N	3S	4N	4S	5
Porifera (sponges)	28,276	±	14,760	0.002	21,348	2,335	8	1,013	369	628	2,575
Coelenterata (coelenterates)	108,955	±	42,589	0.008	18,898	40,431	1,109	25,400	7,625	14,671	819
Mollusca											
Gastropoda (snails	408,889	±	67,970	0.029	27,435	33,468	19,189	88,311	109,585	123,511	7,390
Pelecypoda (bivalves)	3,677	±	1,185	<0.001	439	297	62	192	1,724	864	98
Squids	105	±	67	<0.001	0	20	59	26	0	0	0
Octopuses	2,630	±	2,068	<0.001	0	1,164	807	387	150	0	121
Other mollusks	72	±	15	<0.001	0	6	36	0	0	0	5
Total mollusks	415,373	±	68,475	0.029	27,874	34,956	20,153	88,917	111,459	124,375	7,615
Crustacea											
Chionoecetes sp. (Tanner crab)	322,774	±	94,604	0.023	17,499	25,189	24,380	85,966	76,798	49,817	43,125
Paralithodes sp. (king crab)	156,790	±	175,144	0.011	140,819	283	1,377	5,619	1,851	5,306	1,536
Erimacrus isenbeckii (horse hair crab)	3,741	±	1,252	<0.001	655	512	0	1,188	656	725	4
Paguridae (hermit crab)	286,980	±	72,467	0.020	21,750	24,042	4,959	29,428	77,852	121,955	6,994
Other crab	18,777	±	9,501	0.022	2,937	539	509	441	3,759	6,259	4,333
Total crab	789,063	±	194,064	0.056	183,660	50,565	31,225	122,642	160,915	184,063	55,993
Shrimps	4,147	±	1,566	<0.001	117	119	2,983	380	167	226	155
Other crustaceans	513	±	410	<0.001	78	196	0	27	0	108	105
Total crustaceans	793,723		194,057	0.056	183,856	50,879	34,208	123,049	161,082	184,396	56,253
Echinodermata											
Asteroidea (starfish)	626,023	±	124,372	0.044	199,362	13,958	44,640	44,473	172,573	142,845	8,172
Ophiuroidea (brittlestars)	137,953	±	71,614	0.010	2,732	43,617	22,195	41,799	14,554	12,448	608
Echinoidea (sea urchins)	10,258	±	7,664	0.001	2,961	5,379	557	1,060	14	84	202
Holothuroidea (sea cucumbers)	11,425	±	9,531	0.001	8,584	2,536	0	0	0	22	284
Total echinoderms	785,660	±	142,412	0.055	213,640	65,489	67,393	87,332	187,141	155,400	9,266
Ascidiacea	182,113	±	82,603	0.013	34,008	1,471	0	3,259	87,123	48,291	7,960
Other invertebrates	9,579	±	11,902	0.001	163	47	6,670	986	302	1,210	201
Total invertebrates	2,323,679	±	288,666	0.164	499,786	195,609	129,541	329,955	555,101	528,971	84,688

[a]Rounding accounts for minor discrepancies between sums of subareas and total survey area, and between sum of taxonomic subgroups and major groups.

[b]Proportion of total estimated biomass, fish and invertebrates combined, for the total survey area. Total estimated biomass = 14,167,101 t.

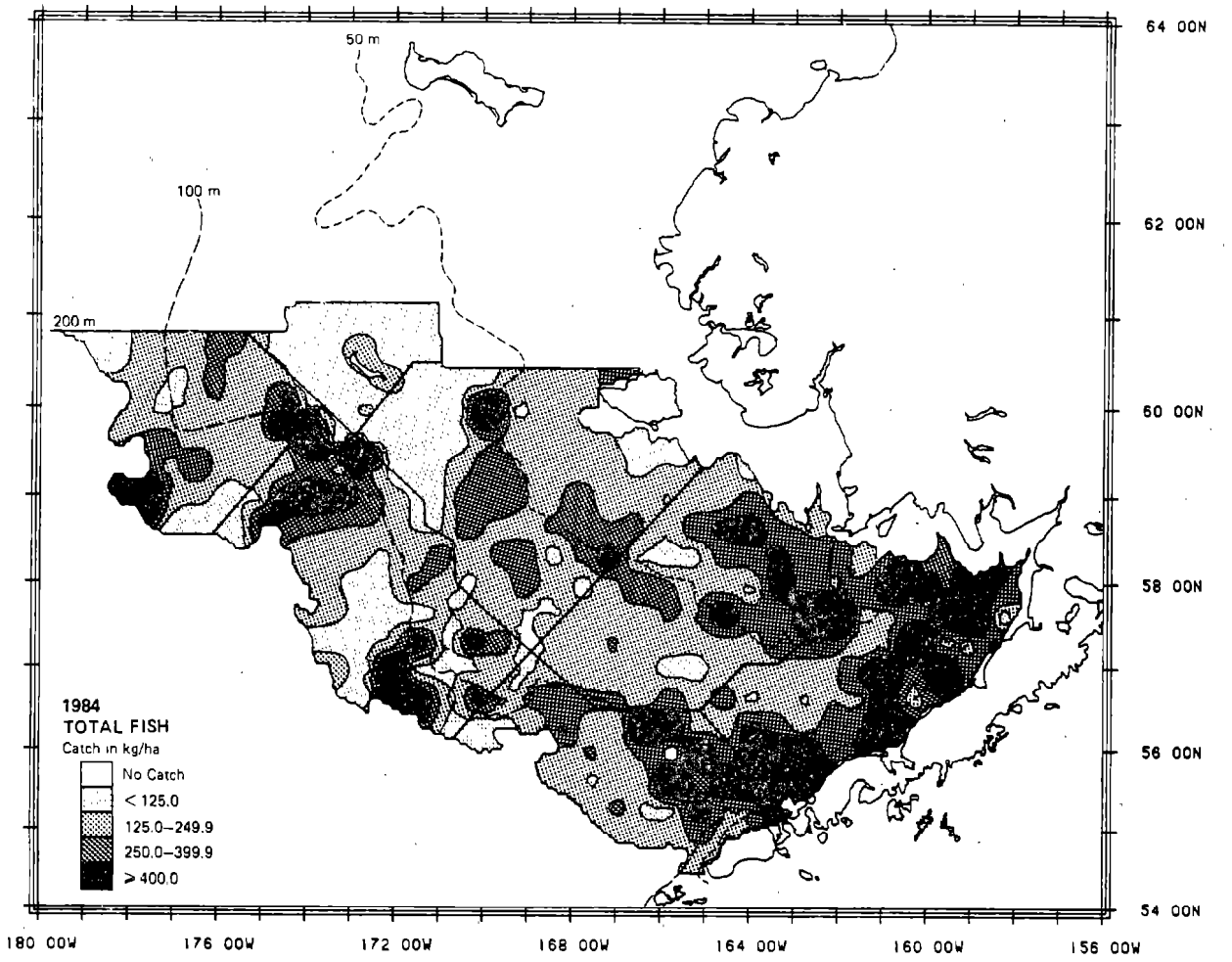

Figure 9.--Distribution and relative abundance in kg/ha of total fish during the 1984 survey.

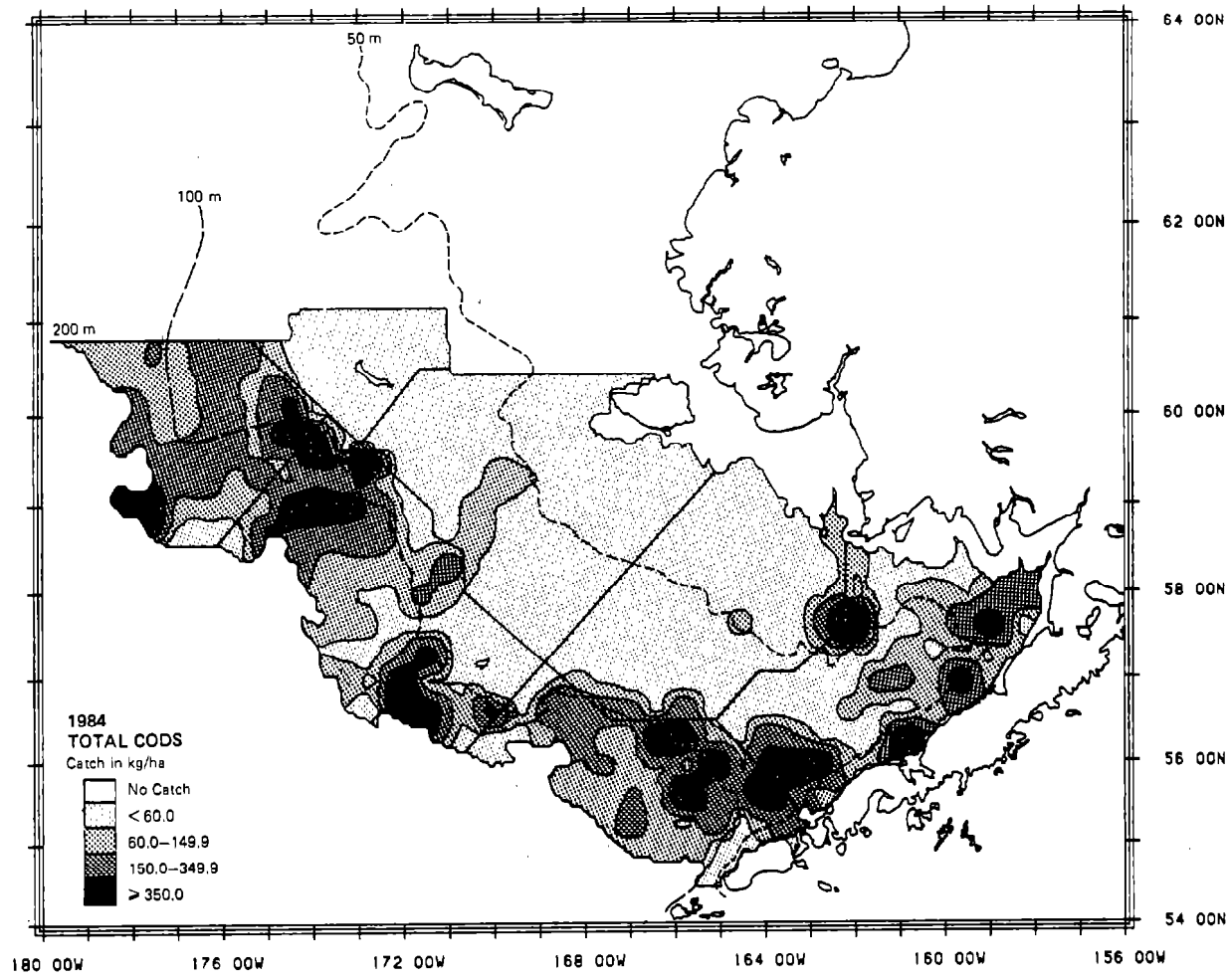

Figure 10.--Distribution and relative abundance in kg/ha of total cods during the 1984 survey.

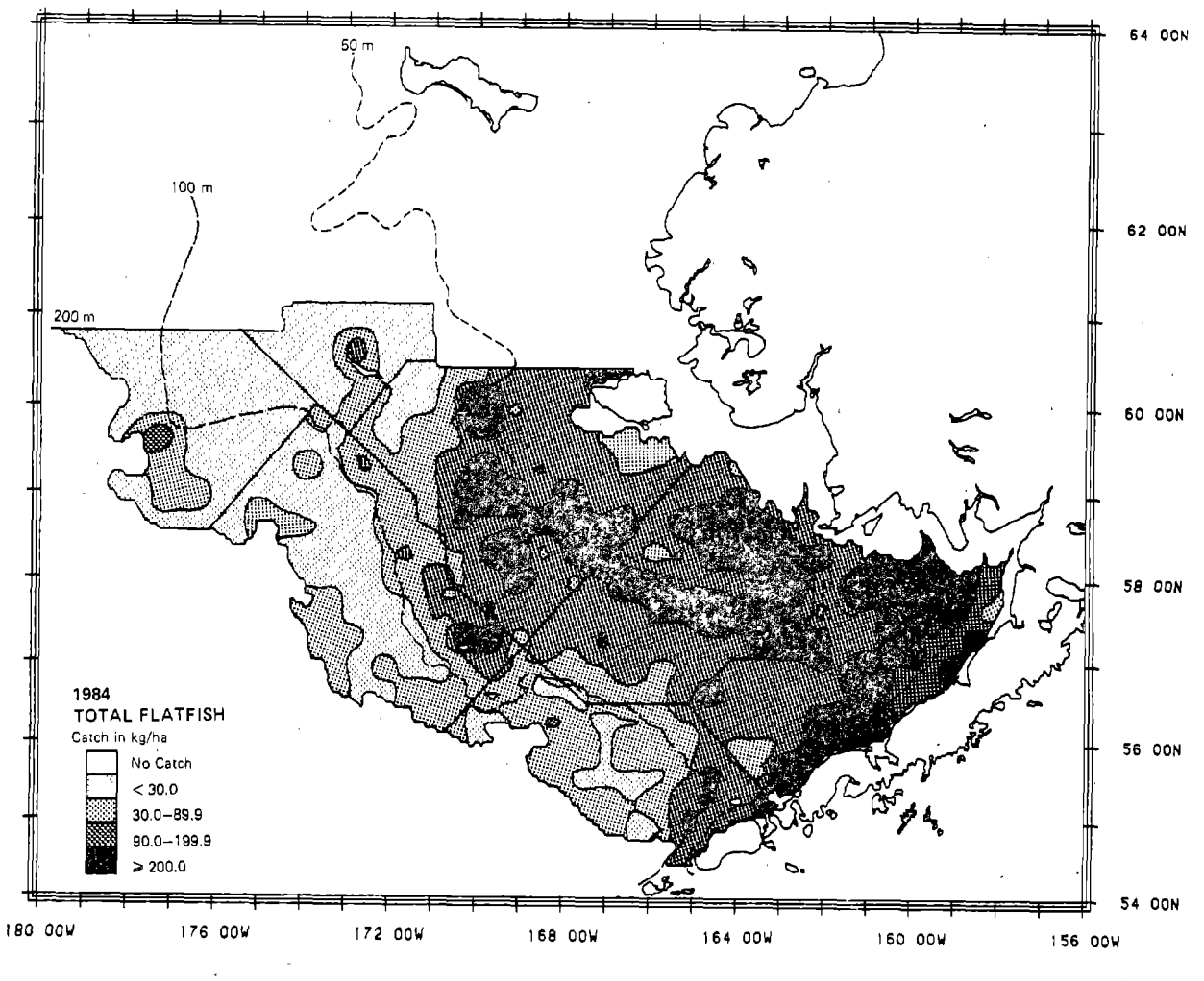

Figure 11 .--Distribution and relative abundance in kg/ha of total flatfish during the 1984 survey.

Sculpins, with an estimated biomass of 237,000 t, were taken in low numbers throughout the survey area and in concentrations of 15-180 kg/ha in the vicinities of the Pribilof and St. Matthew Islands (Fig. 12). Skates had an estimated biomass of approximately 188,000 t and were most abundant in the outer shelf area where they were found in quantities of up to 60 kg/ha (Fig. 13).

Of the less abundant fish families, eelpouts (approximately 31,000 t total biomass) were seldom captured at depths less than 50 m and were most abundant (up to 30 kg/ha) in the north portion of the middle shelf (Fig. 14). Clupeids, represented in trawl samples only by Pacific herring, were taken largely in the Bristol Bay area. (The trawl survey biomass estimate of 15,700 t for this species cannot be considered representative since these fish are primarily distributed in midwater.) Smelts (approximately 10,000 t estimated biomass) were taken in small quantities throughout the inner shelf and in portions of the middle shelf, with one area of high concentration located in the outer shelf just north of Unimak Pass (Fig. 15). Poachers (9,000 t total estimated biomass) were taken consistently over most of the survey area, but never in amounts exceeding 4 kg/ha (Fig. 16). Sablefish, the only representatives of the family Anoplopomatidae in the survey area, were encountered primarily on the outer shelf, with an estimated biomass of 9,000 t. Snailfishes (total estimated biomass of 700 t) were taken infrequently, in scattered tows, at a maximum rate of 1.4 kg/ha (Fig. 17).

Sakhalin sole (Pleuronectes sakhalinensis) were found at several stations in the northern part of the survey area in 1984. This species has not previously been reported in RACE surveys of the eastern Bering Sea. However, specimens may have been encountered in this area in earlier years but misidentified as butter sole (Pleuronectes isolepis), a species very similar in appearance but occurring only as far north as the southeastern Bering Sea.

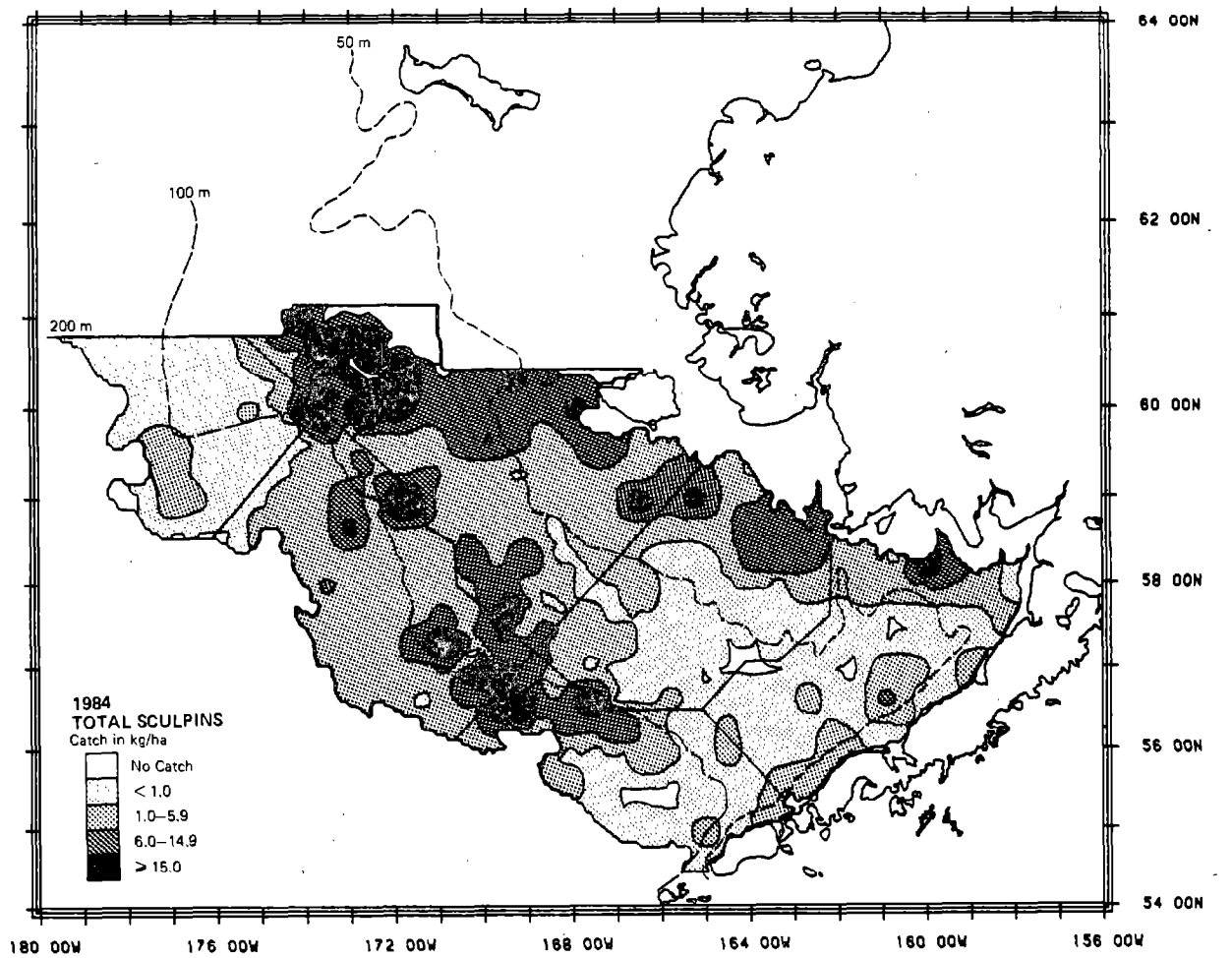

Figure 12.--Distribution and relative abundance in kg/ha of total sculpins during the 1984 survey.

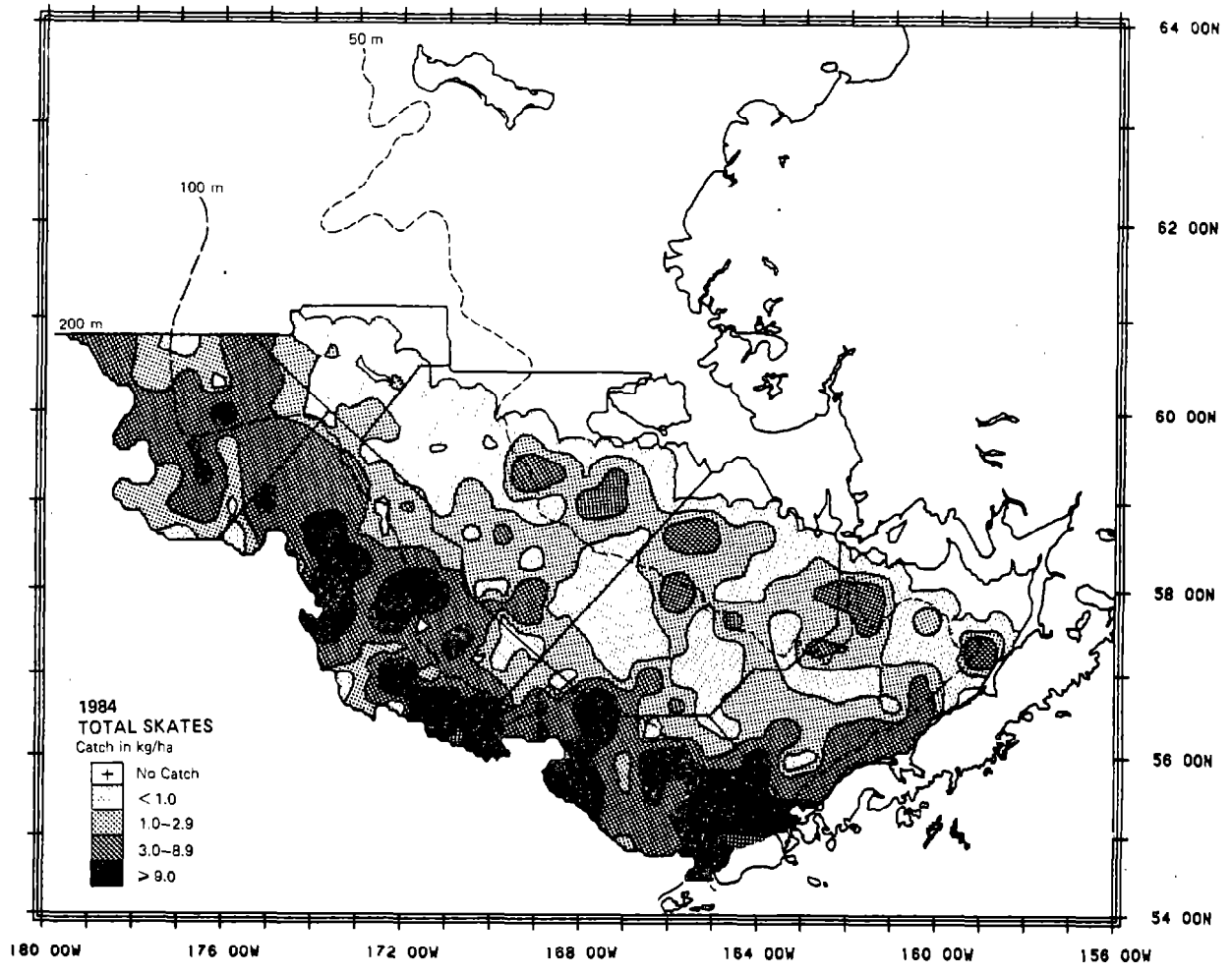

Figure 13. --Distribution and relative abundance in kg/ha of total skates during the 1984 survey.

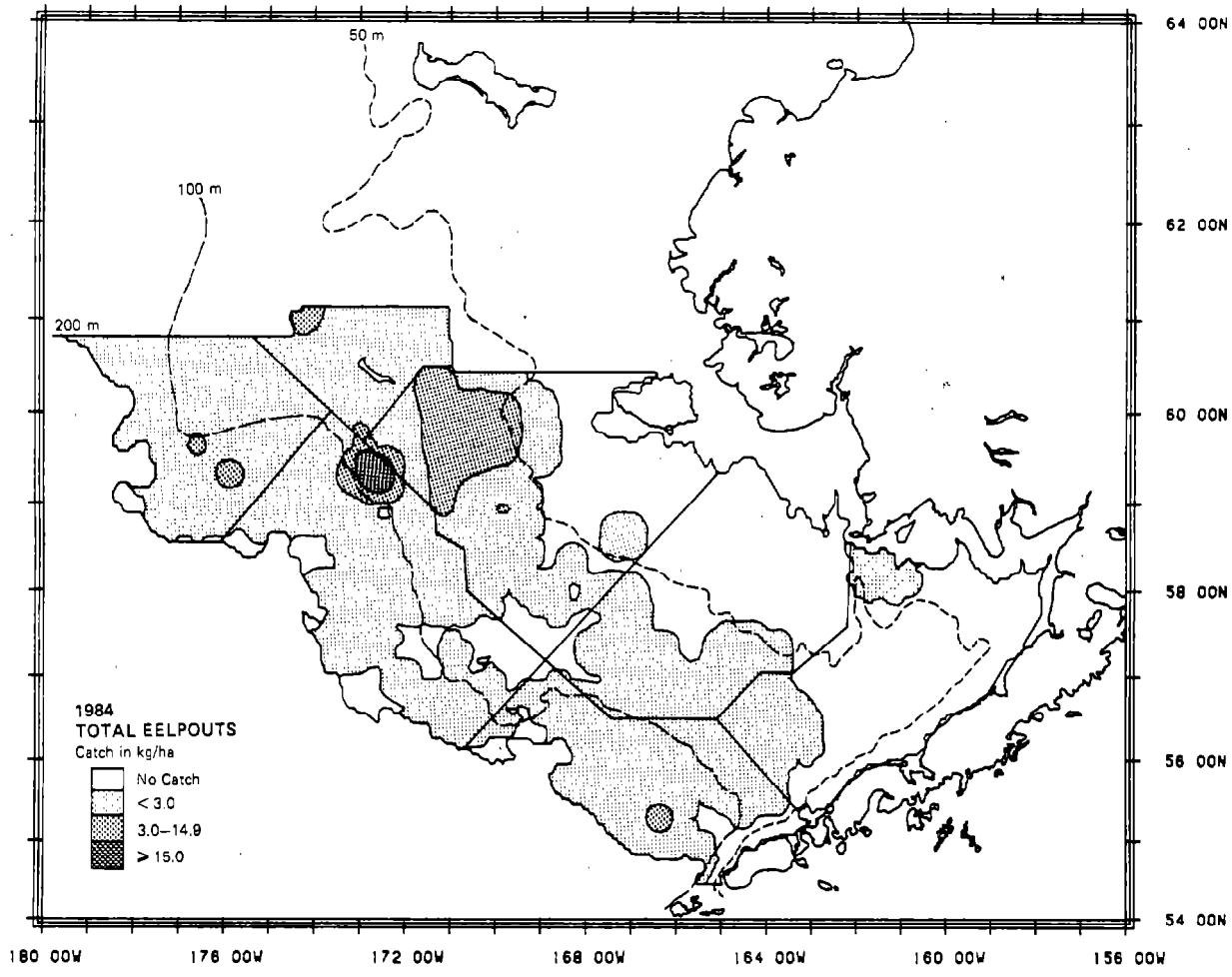

Figure 14.--Distribution and relative abundance in kg/ha of total eelpouts during the 1984 survey.

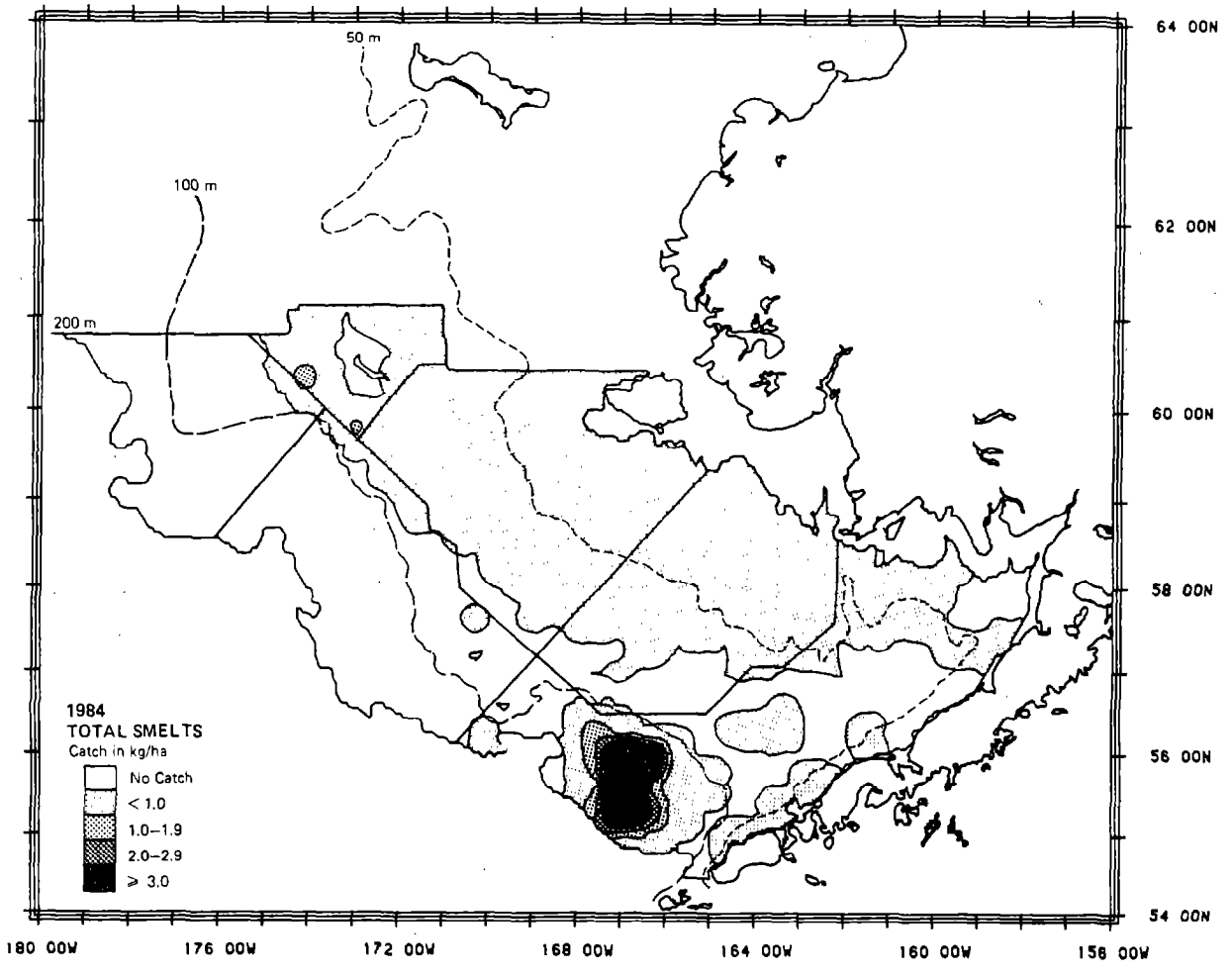

Figure 15.--Distribution and relative abundance in kg/ha of total smelts during the 1984 survey.

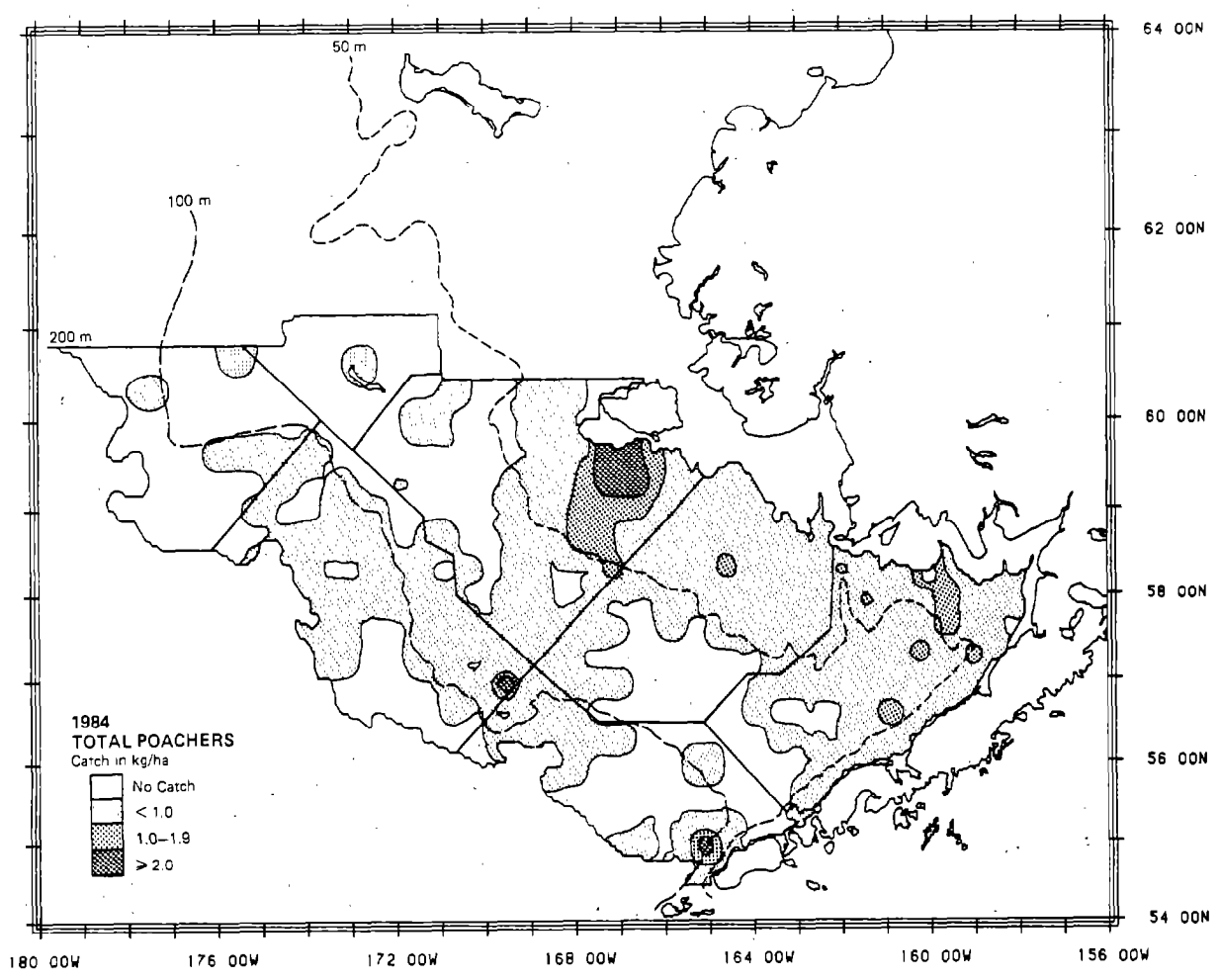

Figure 16.--Distribution and relative abundance in kg/ha of total poachers during the 1984 survey.

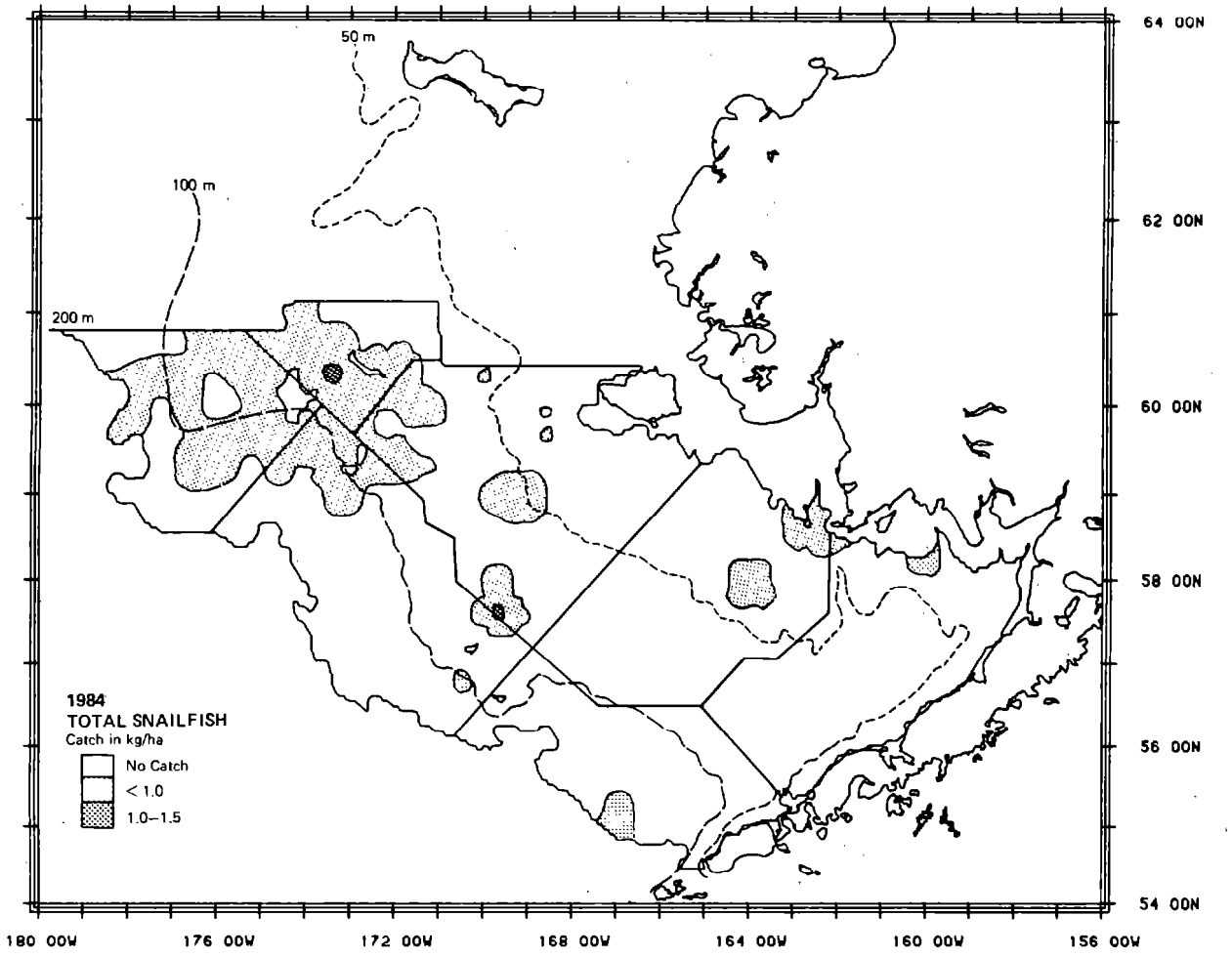

Figure 17.--Distribution and relative abundance in kg/ha of total snailfish during the 1984 survey.

Relative Abundance of Individual Fish Species

Mean catch rates (CPUE in kg/ha) of the 20 fish species taken in greatest abundance over the survey area as a whole are listed, in order of relative abundance, in Table 9. These 20 species accounted for 83% of the total CPUE (fish and invertebrate) in the survey area. Walleye pollock and yellowfin sole, with overall mean catch rates of 98.7 kg/ha and 72.4 kg/ha, respectively, together made up 56% of total CPUE.

As in previous years (Sample et al. 1985, Bakkala et al. 1985, Hirschberger 1985), by far the highest total catch rate (457.4 kg/ha) was observed in subarea 1--Bristol Bay and the shelf north of the Alaska Peninsula. Catches in this region were dominated by yellowfin sole and walleye pollock, taken in nearly equal quantities (132.8 and 128.8 kg/ha) (Table 10). These two species, together with rock sole, captured at a rate of 74.2 kg/ha, and Pacific cod, taken at 28.5 kg/ha, made up 80% of the total catch in this region. The catch rate observed for yellowfin sole in subarea 1 in 1984 was approximately 28% lower than that seen in 1983 (Hirschberger 1985). Catch rates for all other major species in this area were very similar to those obtained in 1983.

Walleye pollock dominated catches in the outer shelf regions (subareas 2, 3S, and 3N), accounting for 54-66% of the total mean CPUE values (Tables 11-13). Catch rates for pollock in 1984 were very similar in all three subareas, ranging from 159.8-189.7 kg/ha, although much higher rates had been observed in the southern regions of the outer shelf than in the northern area during the 1983 survey (Hirschberger 1985). Pacific cod ranked second to pollock in abundance in the northern portions of the outer shelf (subareas 3S and 3N) with catch rates of 32.9 and 39.0 kg/ha. Several species of flounder--flathead sole, arrowtooth flounder, and yellowfin sole--outranked Pacific cod in the southern outer shelf (subarea 2), declining inabundance to the

Table 9.--Rank order of abundance of the 20 most abundant species of fish taken during the 1984 bottom trawl survey, total survey area. (Total effort = 1,611.9 hectares (ha) trawled.)

Rank	Species	Mean CPUE (kg/ha)[a]	Proportion of total CPUE[b]	Cumulative proportion
1	Walleye pollock	98.70	0.324	0.324
2	Yellowfin sole	72.44	0.238	0.562
3	Pacific cod	21.52	0.071	0.633
4	Rock sole	20.82	0.068	0.701
5	Alaska plaice	15.64	0.051	0.752
6	Flathead sole	7.34	0.024	0.776
7	Arrowtooth flounder	3.94	0.013	0.789
8	Pacific halibut	1.94	0.006	0.795
9	Skate unidentified	1.92	0.006	0.801
10	Alaska skate	1.88	0.006	0.807
11	Plain sculpin	1.04	0.003	0.810
12	Warty sculpin	1.01	0.003	0.813
13	Butterfly sculpin	0.83	0.003	0.816
14	Longhead dab	0.61	0.002	0.818
15	Yellow Irish lord	0.60	0.002	0.820
16	Bigmouth sculpin	0.55	0.002	0.822
17	Sparse toothed lycod	0.46	0.002	0.824
18	Great sculpin	0.39	0.001	0.825
19	Greenland turbot	0.39	0.001	0.826
20	*Myoxocephalus* sp.	0.38	0.001	0.827

[a]90% confidence intervals for estimates of mean CPUE are given in Appendix B.

[b]Total CPUE (all fish and invertebrates) = 304.94 kg/ha.

Table 10.--Rank order of abundance of the 20 most abundant species of fish taken during the 1984 bottom trawl survey, Subarea I. (Total effort = 264.2 hectares (ha) trawled.)

Rank	Species	Mean CPUE (kg/ha)	Proportion of total CPUE[a]	Cumulative proportion
1	Yellowfin sole	132.83	0.290	0.290
2	Walleye pollock	128.78	0.282	0.572
3	Rock sole	74.19	0.162	0.734
4	Pacific cod	28.52	0.062	0.796
5	Alaska plaice	9.20	0.020	0.816
6	Flathead sole	7.85	0.017	0.833
7	Pacific halibut	4.06	0.009	0.842
8	Longhead dab	1.44	0.003	0.845
9	Pacific herring	1.32	0.003	0.848
10	Skate unidentified	1.28	0.003	0.851
11	Plain sculpin	1.03	0.002	0.853
12	Starry flounder	0.94	0.002	0.855
13	Alaska skate	0.76	0.002	0.857
14	Great sculpin	0.43	0.001	0.858
15	Sturgeon poacher	0.31	0.001	0.859
16	*Gymnocanthus* sp.	0.27	0.001	0.860
17	Arrowtooth flounder	0.23	0.001	0.860
18	Butter sole	0.12	<0.001	0.860
19	Yellow Irish lord	0.08	<0.001	0.861
20	Rex sole	0.05	<0.001	0.861

[a]Total CPUE (all fish and invertebrates) = 457.40 kg/ha.

Table 11.--Rank order of abundance of the 20 most abundant species of fish taken during the 1984 bottom trawl survey, Subarea 2. (Total effort = 191.8 hectares (ha) trawled.)

Rank	Species	Mean CPUE (kg/ha)	Proportion of total CPUE[a]	Cumulative proportion
1	Walleye pollock	189.65	0.580	0.580
2	Flathead sole	19.78	0.060	0.640
3	Arrowtooth flounder	18.14	0.055	0.695
4	Yellowfin sole	16.09	0.049	0.744
5	Pacific cod	13.07	0.040	0.784
6	Rock sole	10.76	0.033	0.817
7	Skate unidentified	5.31	0.016	0.833
8	Alaska skate	4.38	0.013	0.846
9	Pacific halibut	3.41	0.010	0.856
10	Alaska plaice	3.03	0.009	0.865
11	Yellow Irish lord	1.90	0.006	0.871
12	Rex sole	1.53	0.005	0.876
13	Bigmouth sculpin	1.39	0.004	0.880
14	Eulachon	1.19	0.004	0.884
15	Sablefish	0.97	0.003	0.887
16	Searcher	0.82	0.003	0.890
17	Aleutian skate	0.77	0.002	0.892
18	Northern rockfish	0.49	0.001	0.893
19	Armorhead sculpin	0.41	0.001	0.894
20	Shortfin eelpout	0.30	0.001	0.895

[a]Total CPUE (all fish and invertebrates) = 326.96 kg/ha.

Table 12. --Rank order of abundance of the 20 most abundant species of fish taken during the 1984 bottom trawl survey, Subarea 3S. (Total effort = 298.5 hectares (ha) trawled.)

Rank	Species	Mean CPUE (kg/ha)	Proportion of total CPUE[a]	Cumulative proportion
1	Walleye pollock	159.76	0.538	0.538
2	Pacific cod	32.86	0.111	0.649
3	Rock sole	12.87	0.043	0.692
4	Yellowfin sole	10.88	0.037	0.729
5	Flathead sole	8.07	0.027	0.756
6	Alaska plaice	6.61	0.022	0.778
7	Arrowtooth flounder	6.24	0.021	0.799
8	Skate unidentified	4.15	0.014	0.813
9	Pacific halibut	2.67	0.009	0.822
10	Alaska skate	2.64	0.009	0.831
11	Yellow Irish lord	1.78	0.006	0.837
12	Bigmouth sculpin	1.56	0.005	0.842
13	Great sculpin	0.97	0.003	0.845
14	Sparse toothed lycod	0.77	0.003	0.848
15	Aleutian skate	0.54	0.002	0.850
16	Greenland turbot	0.45	0.002	0.852
17	Sablefish	0.41	0.001	0.853
18	Armorhead sculpin	0.41	0.001	0.854
19	Warty sculpin	0.40	0.001	0.855
20	Rex sole	0.40	0.001	0.856

[a]Total CPUE (all fish and invertebrates) = 296.72 kg/ha.

Table 13.--Rank order of abundance of the 20 most abundant species of fish taken during the 1984 bottom trawl survey, Subarea 3N. (Total effort = 156.4 hectares (ha) trawled.)

Rank	Species	Mean CPUE (kg/ha)	Proportion of total CPUE[a]	Cumulative proportion
1	Walleye pollock	174.12	0.656	0.656
2	Pacific cod	38.96	0.147	0.803
3	Flathead sole	11.52	0.043	0.846
4	Alaska skate	4.19	0.016	0.862
5	Arrowtooth flounder	3.80	0.014	0.876
6	Greenland turbot	2.73	0.010	0.886
7	Wattled eelpout	0.81	0.003	0.889
8	Pacific halibut	0.72	0.003	0.892
9	Rock sole	0.38	0.001	0.893
10	Butterfly sculpin	0.38	0.001	0.894
11	Warty sculpin	0.25	0.001	0.895
12	Thorny sculpin	0.15	0.001	0.896
13	Bigmouth sculpin	0.13	<0.001	0.897
14	Alaska plaice	0.09	<0.001	0.898
15	Great sculpin	0.04	<0.001	0.898
16	Searcher	0.04	<0.001	0.898
17	Yellowfin sole	0.03	<0.001	0.898
18	Sparse toothed eelpout	0.03	<0.001	0.898
19	Marbled snailfish	0.02	<0.001	0.898
20	Pacific herring	0.02	<0.001	0.898

[a]Total CPUE (all fish and invertebrates) = 265.42 kg/ha.

north. Total CPUE on the outer shelf also declined somewhat to the north, dropping from 327 kg/ha in subarea 2 to 265 kg/ha in subarea 3N. Overall CPUE and rank order of species showed little change from the 1983 values for the three outer shelf regions (Hirschberger 1985).

Catches in the inner and middle shelf regions (subareas 4S and 4N) were heavily dominated by yellowfin sole, which comprised 41-49% of the total CPUE, at catch rates of 147 and 101 kg/ha (Tables 14-15). Pollock, Alaska plaice (Pleuronectes quadritubercularus), rock sole, and Pacific cod followed yellowfin sole in abundance in the inner shelf area. (subarea 4S), with catch rates of 13-25 kg/ha. In the middle shelf (subarea 4N), pollock and rock sole CPUE declined to less than 10 kg/ha while the catch rate of Pacific cod remained nearly constant and that of Alaska plaice doubled to 42 kg/ha. Total CPUE observed in both subareas was substantially less in 1984 than that reported for 1983 (Hirschberger 1985) a 16% decrease in CPUE in subarea 4S, and a 25% decrease in subarea 4N.

Overall fish abundance was very low in the region surrounding St. Matthew Island (subarea 5) in 1984. Total CPUE was only 91.5 kg/ha, as compared with a value of 288.9 kg/ha obtained in 1983, and no species was captured at rates in excess of 15 kg/ha mean CPUE (Table 16). This dramatic change reflects the near absence of both walleye pollock and Pacific cod from this region in 1984. Pollock, taken at a rate of 3.3 kg/ha, had been captured at a rate of 152 kg/ha in the same area in 1983. Similarly, the CPUE for Pacific cod was only 2.6 kg/ha in this area in 1984, compared with 37.7 kg/ha in 1983. Catches in subarea 5 in 1984 were dominated by Alaska plaice, butterfly sculpin (Melletes papilio), and various species of Myoxocephalus sculpins.

Table 14--Rank order of abundance of the 20 most abundant species of fish taken during the 1984 bottom trawl survey, Subarea 4S. (Total effort = 268.8 hectares (ha) trawled.)

Rank	Species	Mean CPUE (kg/ha)	Proportion of total CPUE[a]	Cumulative proportion
1	Yellowfin sole	147.06	0.490	0.490
2	Walleye pollock	24.71	0.082	0.572
3	Alaska plaice	20.02	0.067	0.639
4	Rock sole	19.62	0.065	0.704
5	Pacific cod	13.44	0.045	0.749
6	Flathead sole	2.65	0.009	0.758
7	Plain sculpin	1.90	0.006	0.764
8	Longhead dab	1.38	0.005	0.769
9	Skate unidentified	1.01	0.003	0.772
10	Pacific halibut	0.89	0.003	0.775
11	Alaska skate	0.81	0.003	0.778
12	Bigmouth sculpin	0.47	0.002	0.780
13	Arrowtooth flounder	0.23	0.001	0.781
14	Great sculpin	0.19	0.001	0.782
15	Sturgeon poacher	0.15	<0.001	0.782
16	*Myoxocephalus* sp.	0.14	<0.001	0.782
17	Yellow Irish lord	0.12	<0.001	0.782
18	Pacific herring	0.11	<0.001	0.782
19	Capelin	0.10	<0.001	0.782
20	Armorhead sculpin	0.09	<0.001	0.783

[a]Total CPUE (all fish and invertebrates) = 300.34 kg/ha.

Table 15.--Rank order of abundance of the 20 most abundant species of fish taken during the 1984 bottom trawl survey, Subarea 4N. (Total effort = 340.7 hectares (ha) trawled.)

Rank	Species	Mean CPUE (kg/ha)	Proportion of total CPUE[a]	Cumulative proportion
1	Yellowfin sole	100.88	0.414	0.414
2	Alaska plaice	41.97	0.172	0.586
3	Pacific cod	13.85	0.057	0.643
4	Walleye pollock	8.62	0.035	0.678
5	Rock sole	5.62	0.023	0.701
6	Plain sculpin	2.56	0.010	0.711
7	Warty sculpin	2.56	0.010	0.721
8	Sparse toothed eelpout	1.36	0.006	0.727
9	Flathead sole	1.28	0.005	0.732
10	Longhead dab	0.61	0.003	0.735
11	Alaska skate	0.59	0.002	0.737
12	Pacific halibut	0.54	0.002	0.739
13	Skate unidentified	0.50	0.002	0.741
14	Great sculpin	0.42	0.002	0.743
15	Sturgeon poacher	0.42	0.002	0.745
16	Butterfly sculpin	0.33	0.001	0.746
17	Myoxocephalus sp.	0.25	0.001	0.747
18	Pacific herring	0.24	0.001	0.748
19	Armorhead sculpin	0.16	0.001	0.749
20	Saffron cod	0.12	<0.001	0.750

[a]Total CPUE (all fish and invertebrates) = 243.82 kg/ha.

Table 16.--Rank order of abundance of the 20 most abundant species of fish taken during the 1984 bottom trawl survey, Subarea 5. (Total effort = 91.5 (ha) hectares trawled.)

Rank	Species	Mean CPUE (kg/ha)	Proportion of total CPUE[a]	Cumulative proportion
1	Alaska plaice	14.91	0.157	0.157
2	Butterfly sculpin	13.86	0.146	0.303
3	Warty sculpin	8.15	0.086	0.389
4	*Myoxocephalus* sp.	5.34	0.056	0.445
5	Yellowfin sole	4.34	0.046	0.491
6	Walleye pollock	3.33	0.035	0.526
7	Pacific cod	2.61	0.027	0.553
8	Flathead sole	2.01	0.021	0.574
9	Sparse toothed eelpout	1.12	0.012	0.586
10	Alaska skate	0.44	0.005	0.591
11	Pacific herring	0.42	0.004	0.595
12	Plain sculpin	0.35	0.004	0.599
13	Skate unidentified	0.25	0.003	0.602
14	Rock sole	0.18	0.002	0.604
15	Capelin	0.18	0.002	0.606
16	Arctic cod	0.11	0.001	0.607
17	Snailfish unidentified	0.10	0.001	0.608
18	*Limanda sakhalinensis*	0.05	0.001	0.609
19	Pacific halibut	0.04	<0.001	0.609
20	Greenland turbot	0.03	<0.001	0.609

[a]Total CPUE (all fish and invertebrates) = 95.01 kg/ha.

Abundance, Distribution, and Size and Age Composition of Principal Fish Species

In this section, geographical distribution, biomass and population estimates, and size canposition are presented for each of the following economically important eastern Bering Sea groundfish populations: walleye pollock, Pacific cod, sablefish, yellowfin sole, rock sole, flathead sole and Bering flounder, Alaska plaice, Greenland turbot (Reinhardtius hippoglassoides), arrowtooth and Kamchatka flounder, and Pacific halibut. Distribution is shown in shaded contour plots of CPUE in kilograms per hectare. Estimated biomass, population number, and mean size (in length and weight) are summarized by stratum and for the entire survey area. Histograms of relative length canposition for each stratum and for the total survey area, as well as histograms of absolute abundance (in number's) by length interval for the total survey area, are given for all of the above species. Estimated numbers by age class are shown for the on-bottom portion of the walleye pollock population; at this writing, age information is unavailable for the remaining species.

The rank order of relative abundance of all fish and invertebrates caught during the 1984 survey is given in Appendix B. Detailed computer listings of population and biomass estimates for each species by stratum are given in Appendix C. Population estimates by sex and size class are found in Appendix D. The age-length key used in determining the age canposition of walleye pollock is given in Appendix E, and the estimated pollock population numbers by age class are listed in Appendix F.

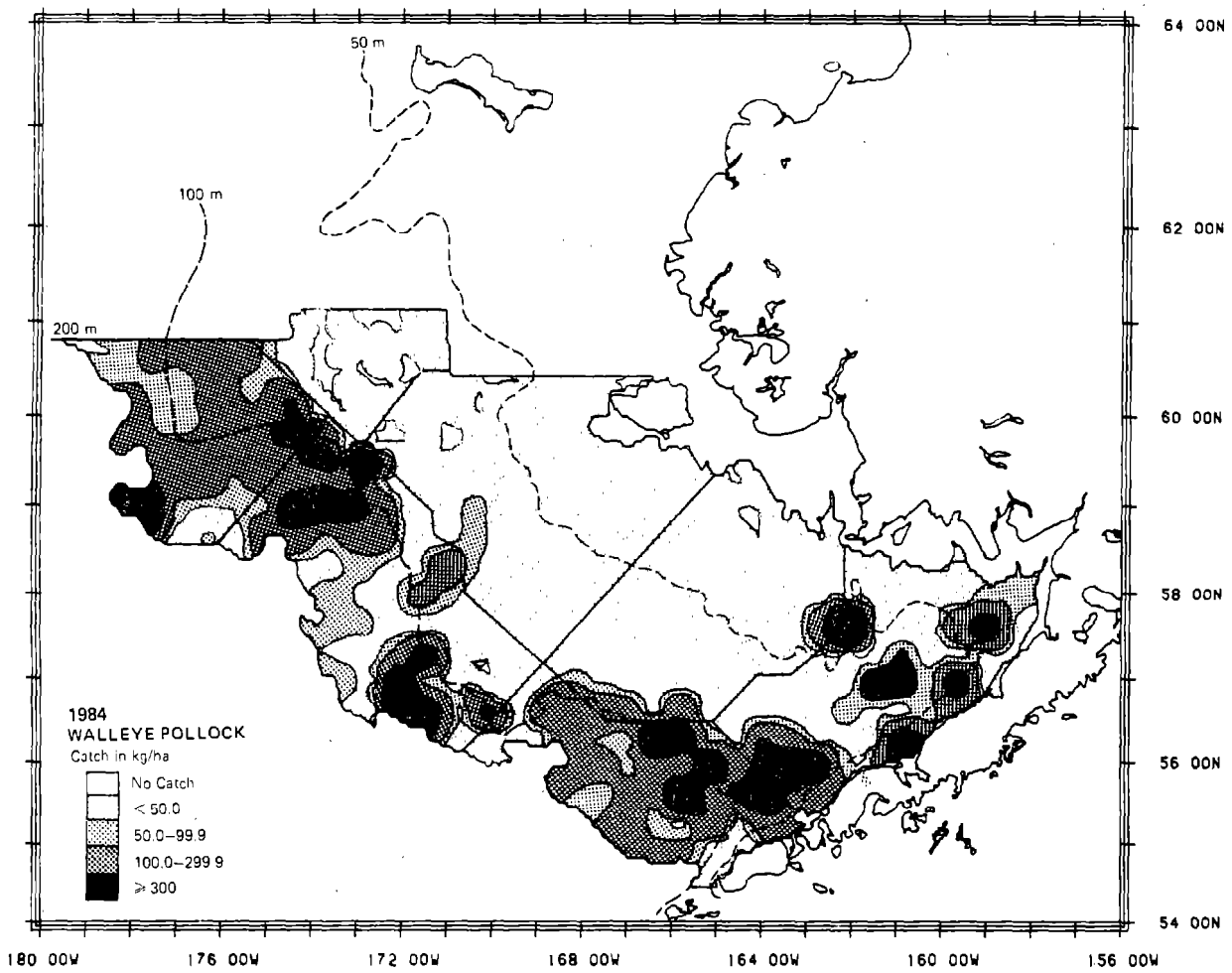

Figure 18. --Distribution and relative abundance in kg/ha of walleye pollock during the 1984 survey.

Table 17. --Abundance estimates and mean size of walleye pollock by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^6)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	128.77	1,013,613	0.221	1,268	0.167	0.799	47.56
2	189.63	1,154,448	0.252	1,770	0.233	0.652	44.53
3N	174.12	836,205	0.182	1,766	0.233	0.473	38.49
3S	159.75	1,292,998	0.282	2,387	0.314	0.542	40.75
4N	8.62	79,070	0.017	138	0.018	0.573	31.44
4S	24.70	201,382	0.044	247	0.033	0.815	46.55
5	3.33	7,608	0.002	18	0.002	0.415	27.19
All subareas combined[b]	98.69	4,585,324		7,594		0.604	42.23
95% confidence interval		3,681,023-5,489,624		6,123-9,066			

[a]Variances of abundance estimates are given in Appendix C-1.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

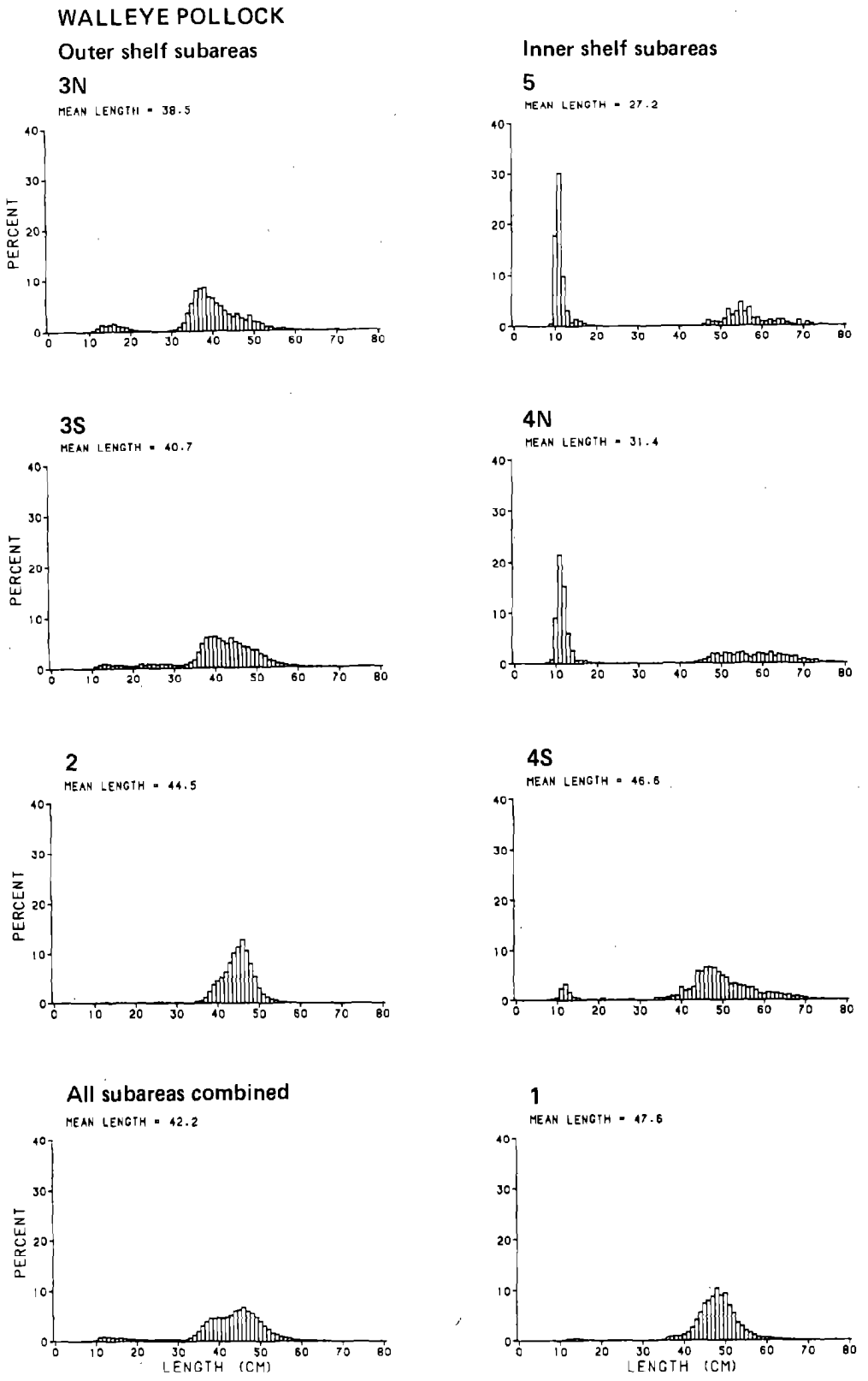

Figure 19.--Estimated relative size composition of the walleye pollock population sampled during the 1984 survey, by subarea and for the total survey area (sexes combined).

Table 18.--Estimated population size of walleye pollock age groups by subarea and for all subareas combined (millions of fish).

Age	Year Class	Subarea 1	2	3N	3S	4N	4S	5	All subareas combined	Proportion of total
1[a]	--	21.42	7.34	116.90	104.58	77.90	21.75	11.76	361.67	0.0476
2	1982	6.43	13.66	69.18	148.02	1.21	2.38	0.14	241.01	0.0317
3	1981	9.13	38.37	184.78	167.57	0.03	2.63	0.00	402.51	0.0530
4	1980	56.54	186.13	469.72	417.88	0.32	11.84	0.01	1,142.43	0.1504
5	1979	189.66	373.57	337.20	456.52	2.76	30.59	0.27	1,390.57	0.1831
6	1978	732.84	992.62	475.89	866.56	17.76	110.04	2.24	3,197.95	0.4211
7	1977	176.27	133.70	82.07	167.30	13.74	34.62	1.77	609.47	0.0803
8	1976	42.11	17.93	16.62	33.05	8.99	14.54	0.96	134.20	0.0177
9	1975	19.86	4.40	7.65	14.54	6.52	8.82	0.50	62.30	0.0082
10	1974	6.16	0.78	2.65	4.88	3.09	4.11	0.32	21.99	0.0029
11	1973	3.93	0.60	1.73	2.86	2.48	2.93	0.19	14.71	0.0019
12[a]	--	3.68	0.41	1.88	3.04	3.10	2.91	0.16	15.17	0.0020
All ages combined[b]		1,268.03	1,769.52	1,766.26	2,386.79	137.90	247.16	18.33	7,593.99	1.0000

[a]Age '1' includes both 1-year-old fish and all fish smaller than the smallest individual in the aged sample. Age '12' includes 12-year-old fish and all fish larger than the largest individual in the aged sample.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

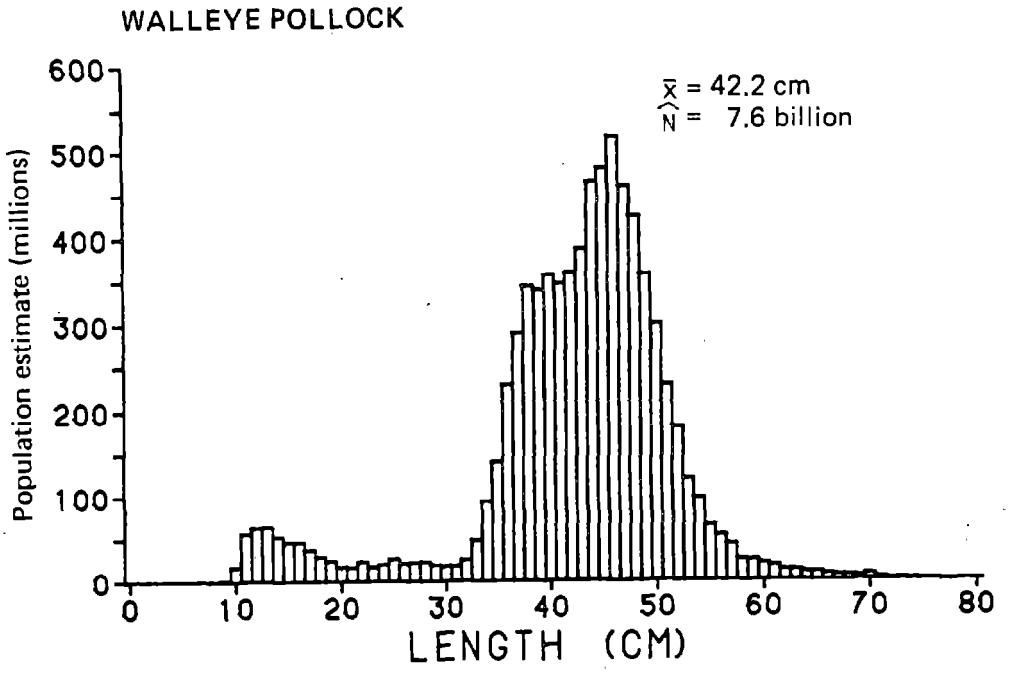

Figure 20.--Estimated size composition of the walleye pollock population sampled during the 1984 survey, in millions of fish (sexes combined).

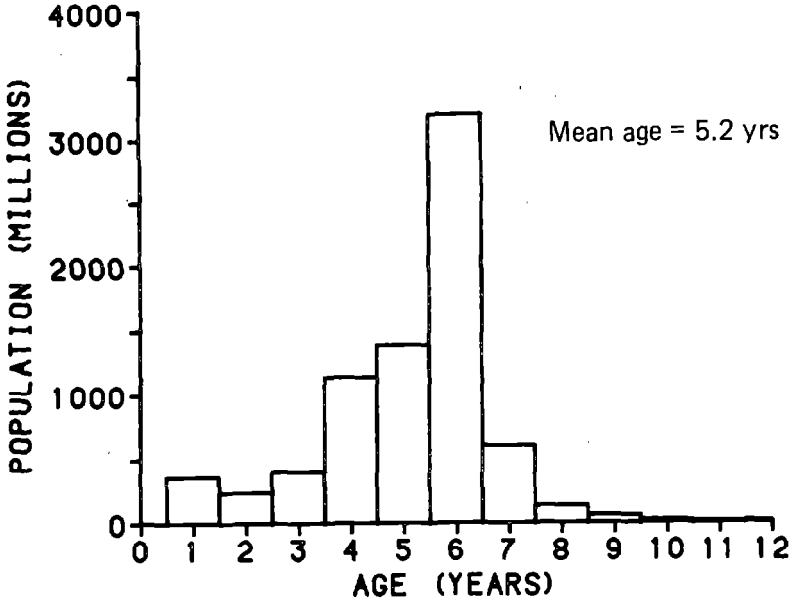

Figure 21.--Estimated age composition of the walleye pollock population sampled during the 1984 surrey, in millions of fish (sexes combined).

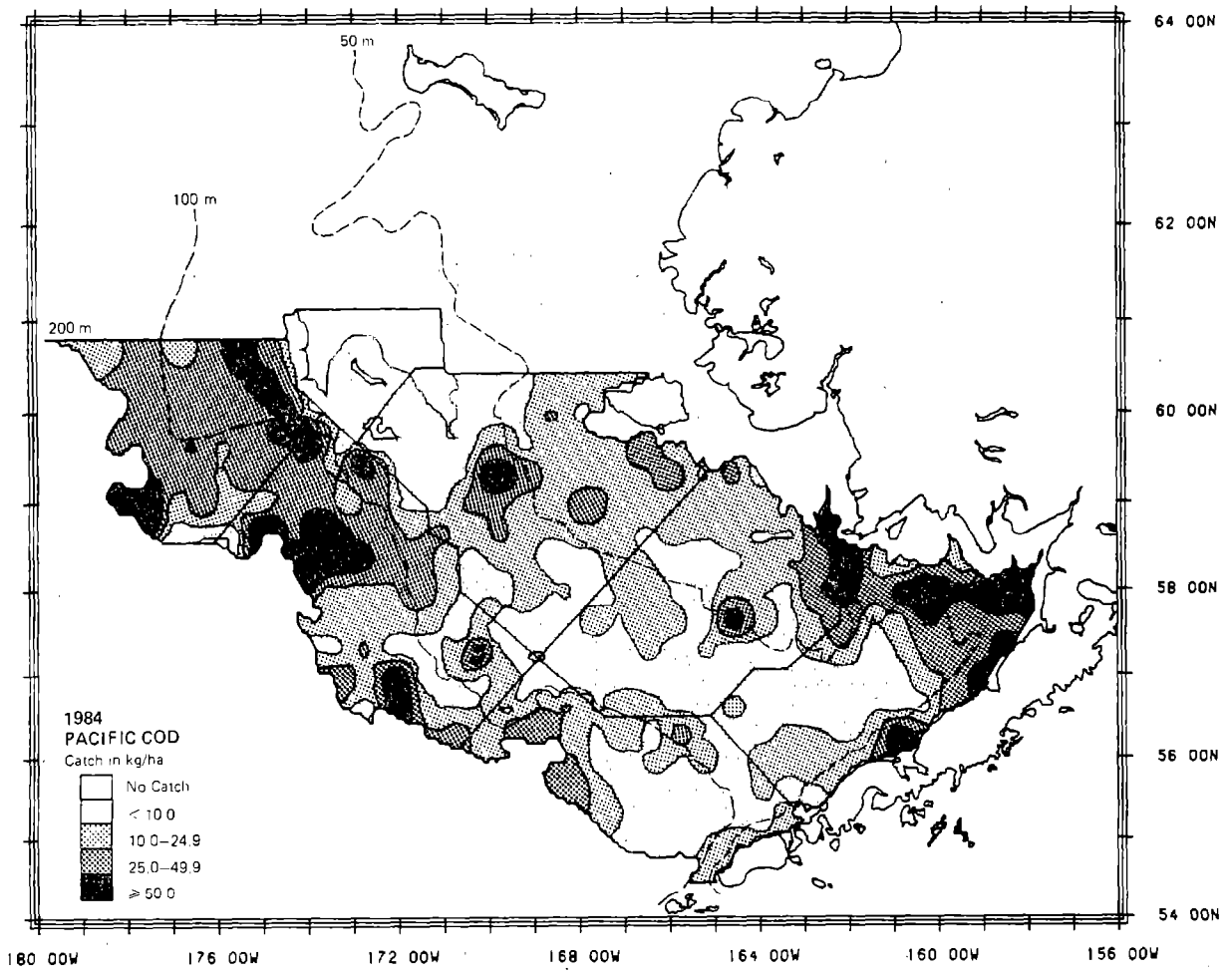

Figure 22. --Distribution and irelative abundance in kg/ha of Pacific cod during the 1984 survey.

Table 19.--Abundance estimates and mean size of Pacific cod by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^6)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	28.52	224,503	0.225	178	0.280	1.263	40.19
2	13.07	79,578	0.080	31	0.049	2.575	54.92
3N	38.96	187,107	0.187	78	0.123	2.398	51.85
3S	32.86	265,921	0.266	148	0.233	1.802	46.51
4N	13.85	127,012	0.127	85	0.134	1.491	45.32
4S	13.43	109,514	0.110	109	0.172	1.005	38.51
5	2.61	5,954	0.006	7	0.011	0.865	36.01
All subareas combined[b]	21.51	999,588		635		1.574	44.16
95% confidence interval		872,793-1,126,384		546-726			

[a]Variances of abundance estimates are given in Appendix C-2.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

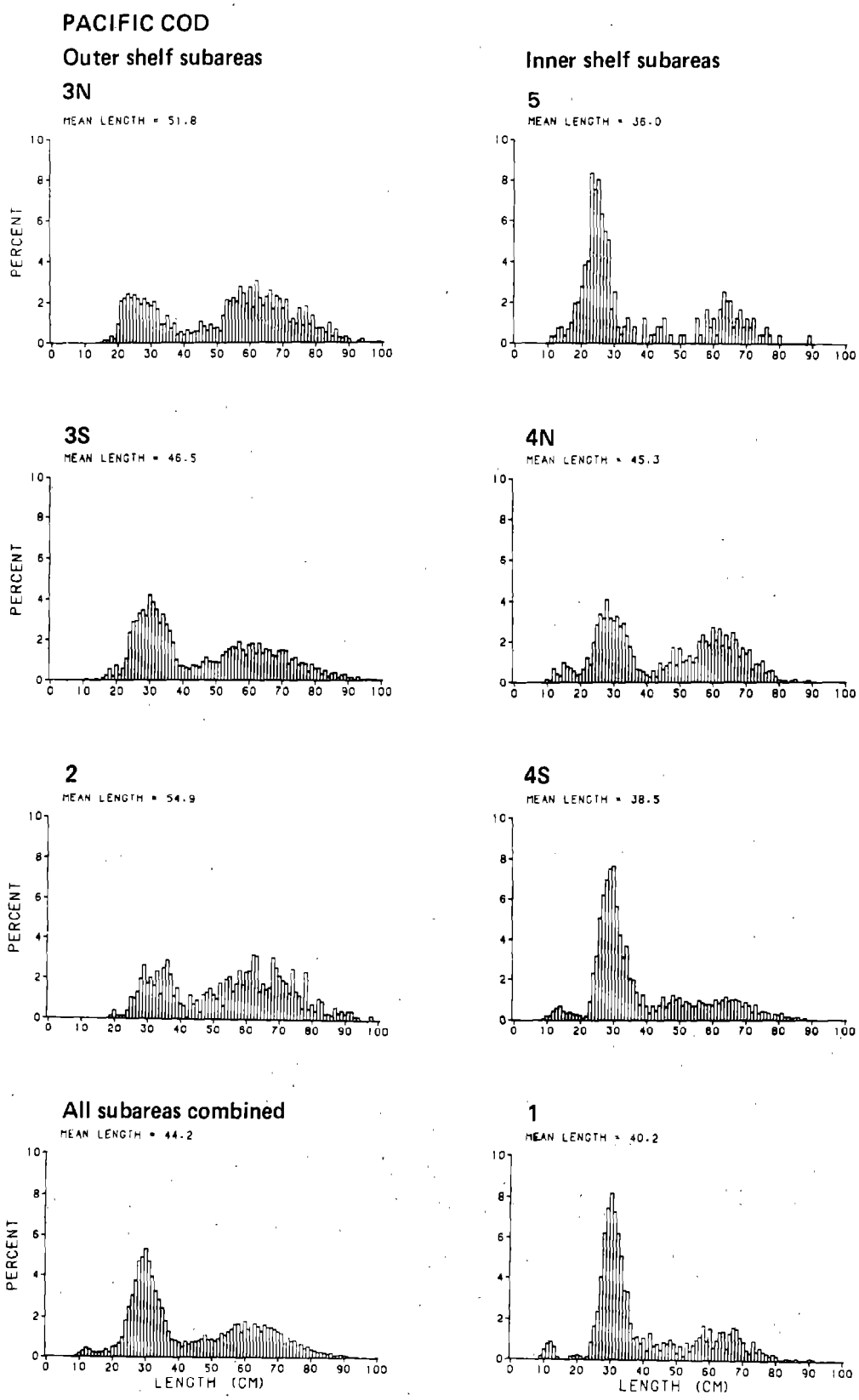

Figure 23.--Estimated relative size composition of the Pacific cod population sampled during the 1984 survey, by subarea and for the total survey area (sexes combined).

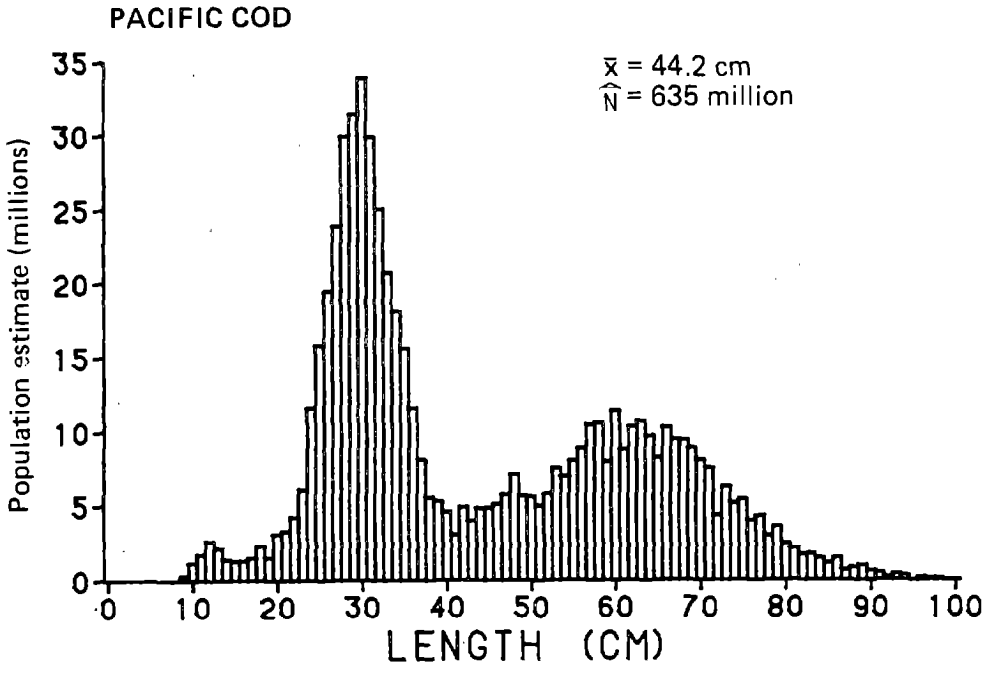

Figure 24. --Estimated size composition of the Pacifc cod population sampled during the 1984 survey, in millions of fish (sexes cabined).

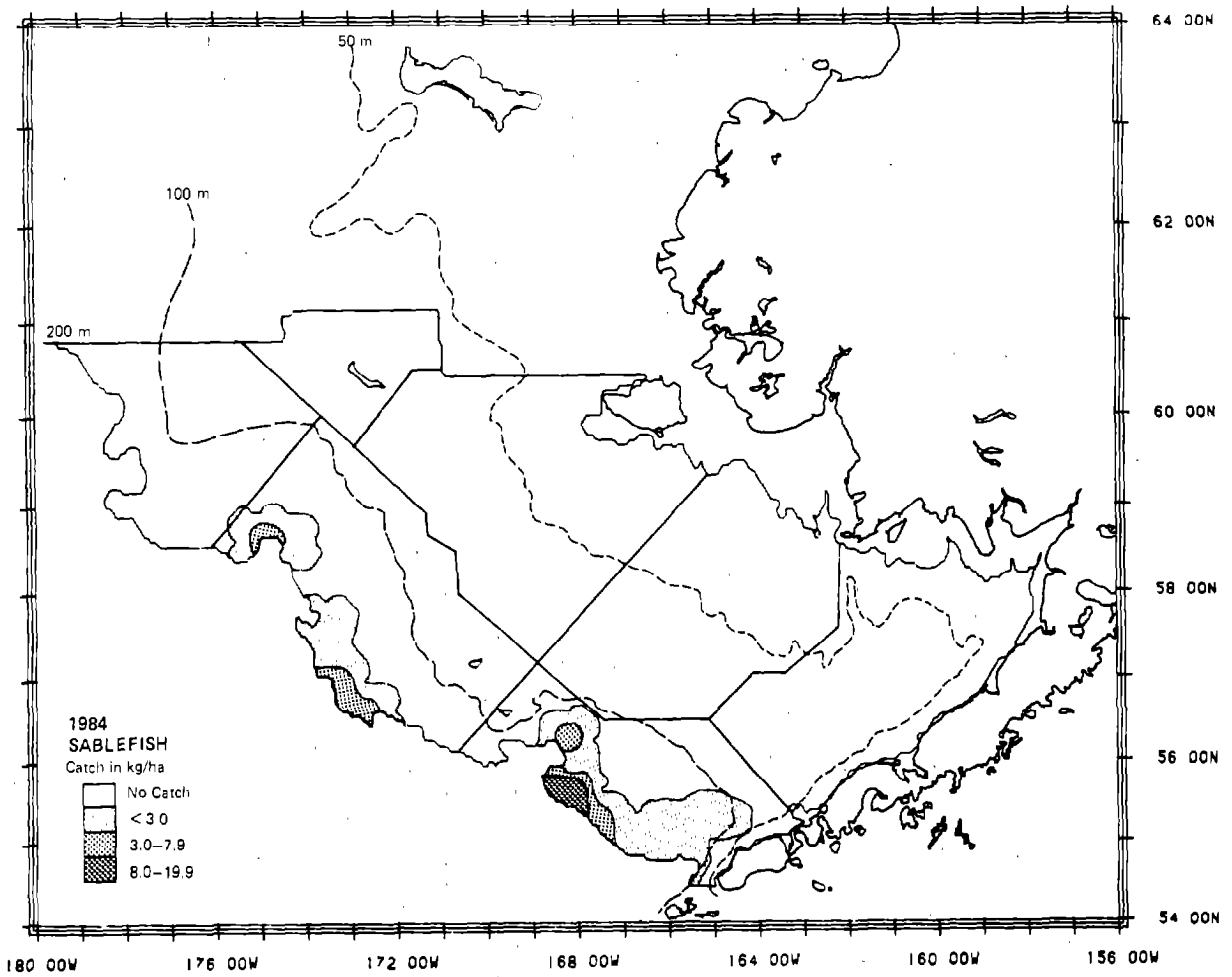

Figure 25. --Distribution and relative abundance in kg/ha of sablefish during the 1984 survey.

Table 20.--Abundance estimates and mean size of sablefish by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^3)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	<0.01	16	0.002	29	0.005	0.544	--
2	0.97	5,900	0.639	3,867	0.696	1.526	53.16
3N	0	0	0	0	0	--	--
3S	0.41	3,310	0.359	1,661	0.299	1.993	53.92
4N	0	0	0	0	0	--	--
4S	0	0	0	0	0	--	--
5	0	0	0	0	0	--	--
All subareas combined[b]	0.20	9,226		5,557		1.660	53.39
95% confidence interval		2,334-16,118		1,378-9,737			

[a]Variances of abundance estimates are given in Appendix C-3.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

SABLEFISH
Outer shelf subareas

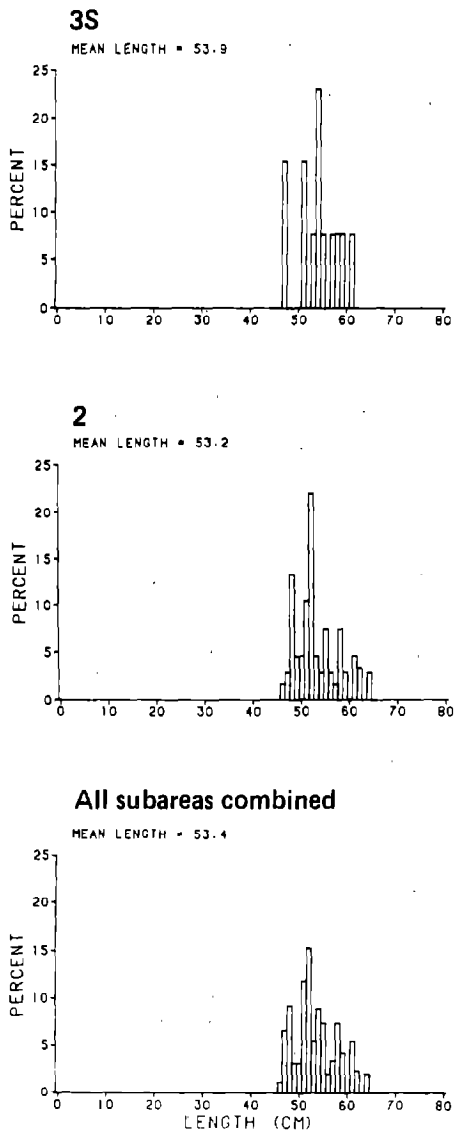

Figure 26.--Estimated relative size composition of the sablefish population sampled during the 1984 survey, by subarea and for the total survey area (sexes combined).

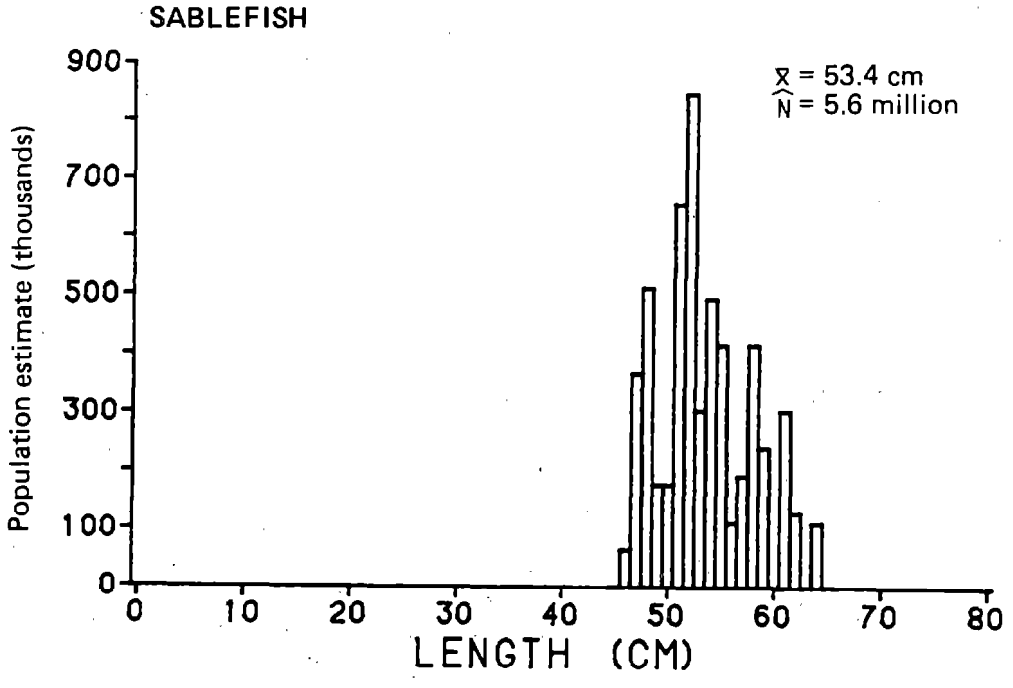

Figure 27.--Estimated size composition of the sablefish population sampled during the 1984 survey, in millions of fish (sexes combined).

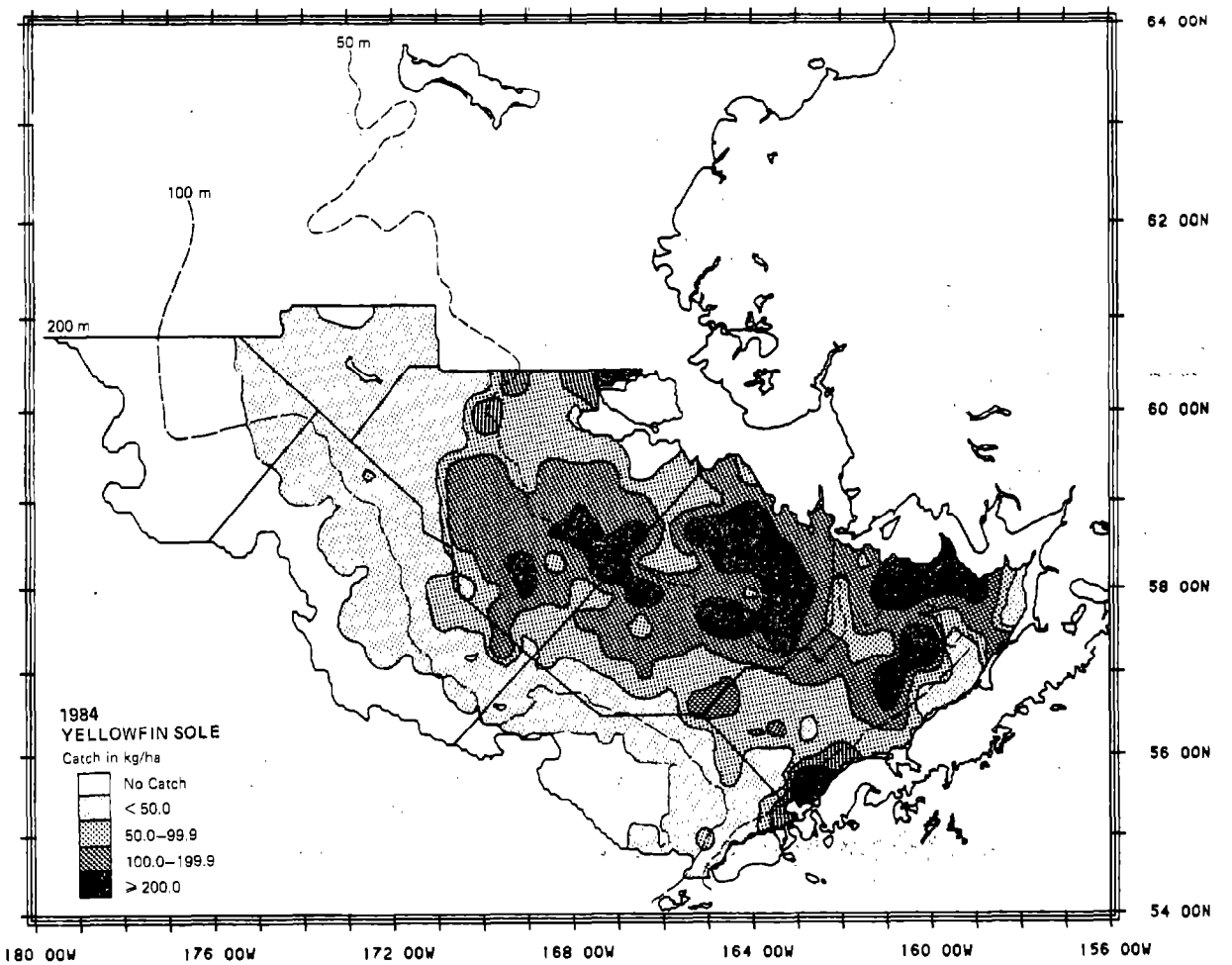

Figure 28.--Distribution and relative abundance in kg/ha of yellowfin sole during the 1984 survey.

Table 21.--Abundance estimates and mean size of yellowfin sole by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^6)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	132.81	1,045,448	0.311	4,650	0.307	0.225	26.45
2	16.09	97,972	0.029	315	0.021	0.311	28.99
3N	0.03	144	<0.001	<1	<0.001	0.353	30.98
3S	10.88	88,089	0.026	284	0.019	0.310	29.07
4N	100.86	924,943	0.275	4,104	0.271	0.225	25.83
4S	147.05	1,198,763	0.356	5,761	0.380	0.208	25.56
5	4.34	9,924	0.003	30	0.002	0.330	30.83
All subareas combined[b]	72.43	3,365,281		15,145		0.222	26.06
95% confidence interval		2,971,349-3,759,213		13,303-16,987			

[a]Variances of abundance estimates are given in Appendix C-4.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

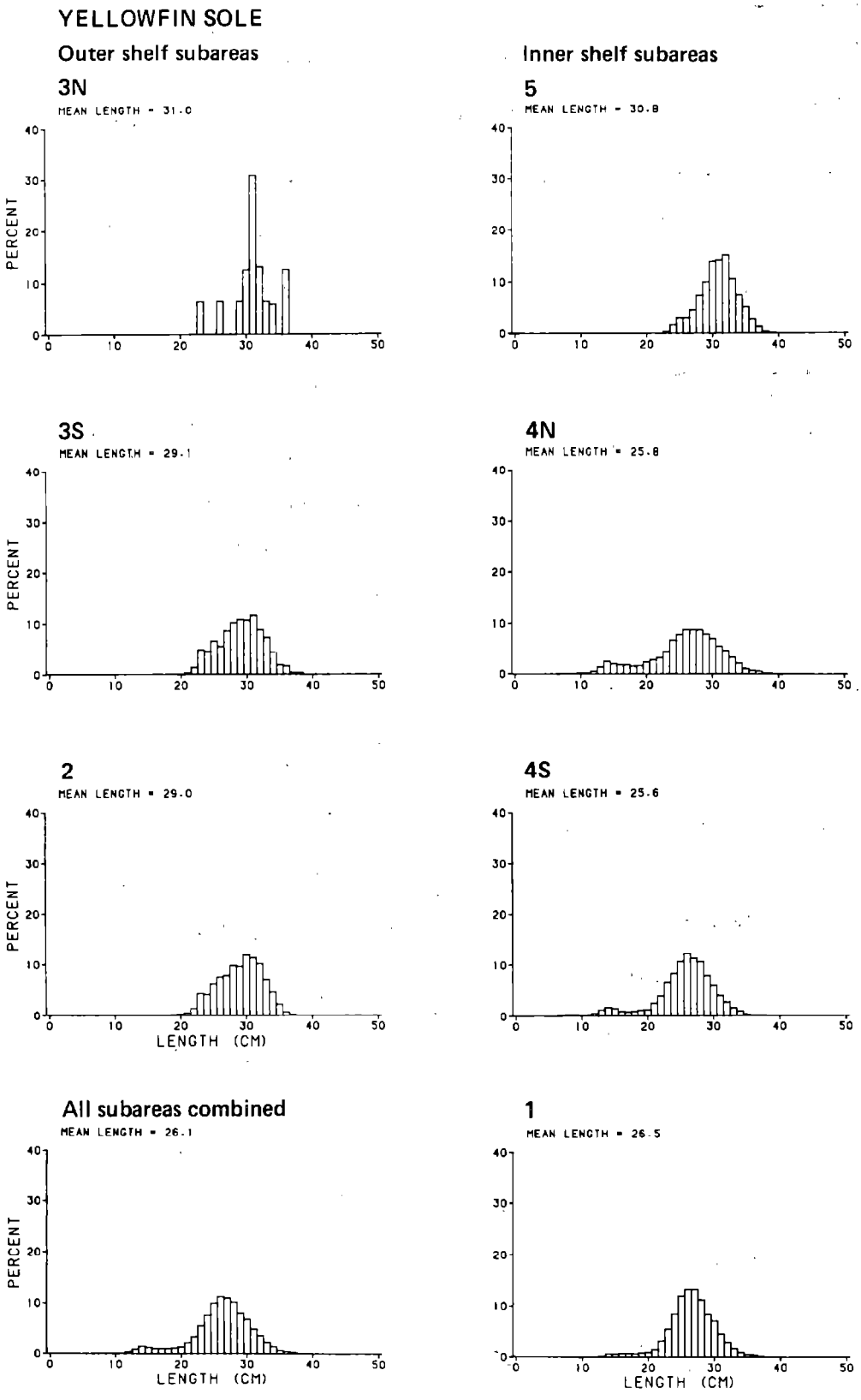

Figure 29.--Estimated relative size composition of the yellowfin sole population sampled during the 1984 survey, by subarea and for the total survey area (sexes combined).

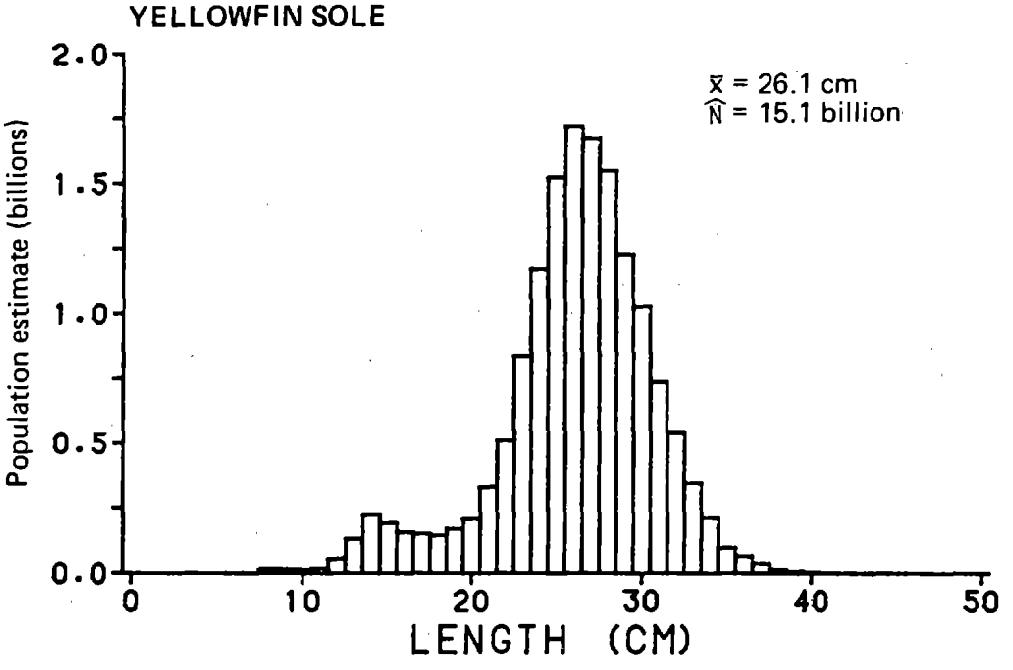

Figure 30.--Estimated size composition of the yellowfin sole population sampled during the 1984 survey, in millions of fish (sexes combined).

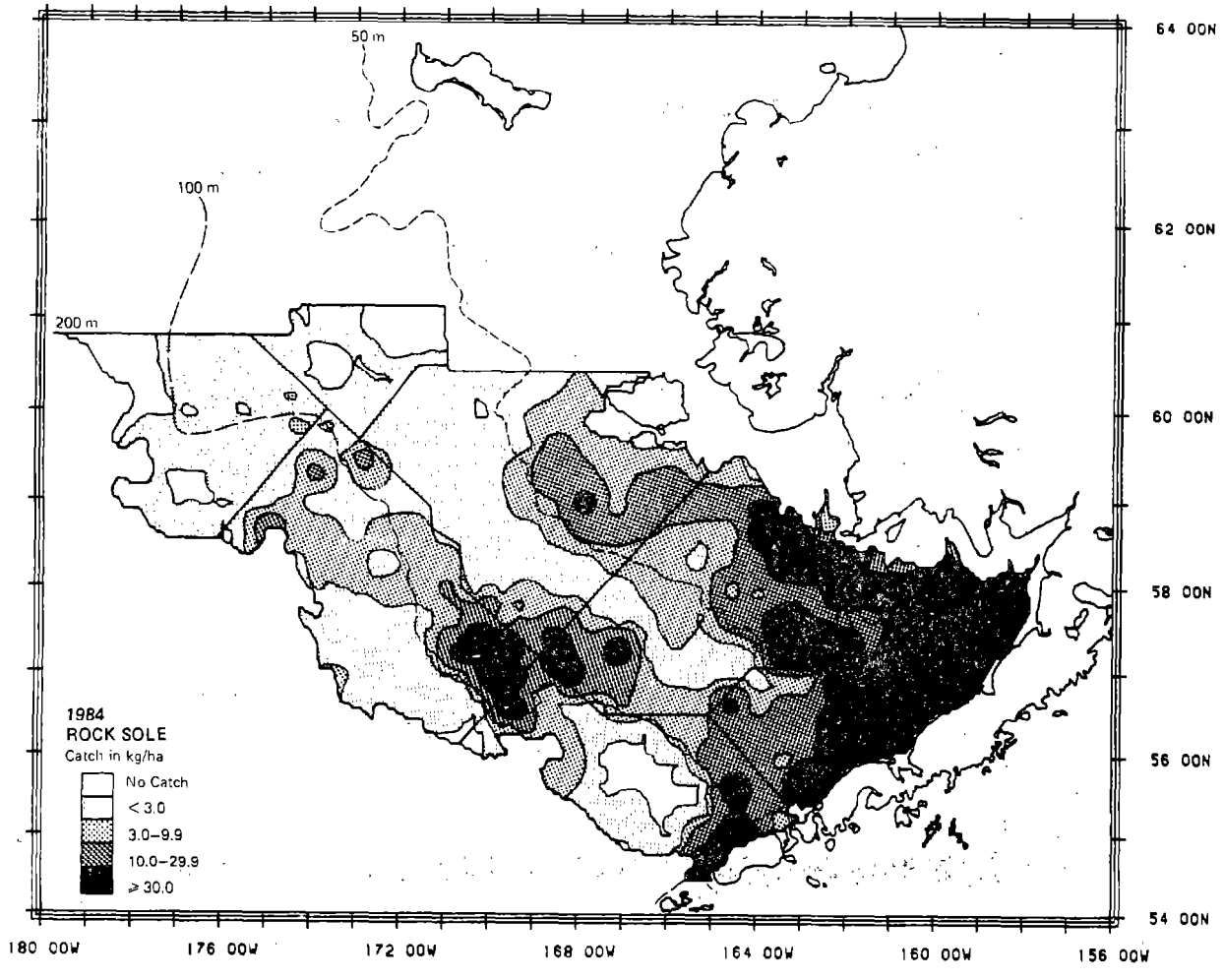

Figure 31.--Distribution and relative abundance in kg/ha of rock sole during the 1984 survey.

Table 22.--Abundance estimates and mean size of rock sole by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^6)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	74.18	583,894	0.604	3,230	0.574	0.181	24.28
2	10.76	65,530	0.068	259	0.046	0.253	26.08
3N	0.38	1,837	0.002	5	0.001	0.386	25.40
3S	12.86	104,125	0.108	421	0.075	0.247	25.23
4N	5.62	51,512	0.053	555	0.099	0.093	17.64
4S	19.62	159,967	0.165	1,157	0.205	0.138	20.72
5	0.18	415	<0.001	4	0.001	0.108	17.64
All subareas combined[b]	20.82	967,279		5,630		0.172	23.05
95% confidence interval		795,783-1,138,775		4,529-6,732			

[a]Variances of abundance estimates are given in Appendix C-5.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

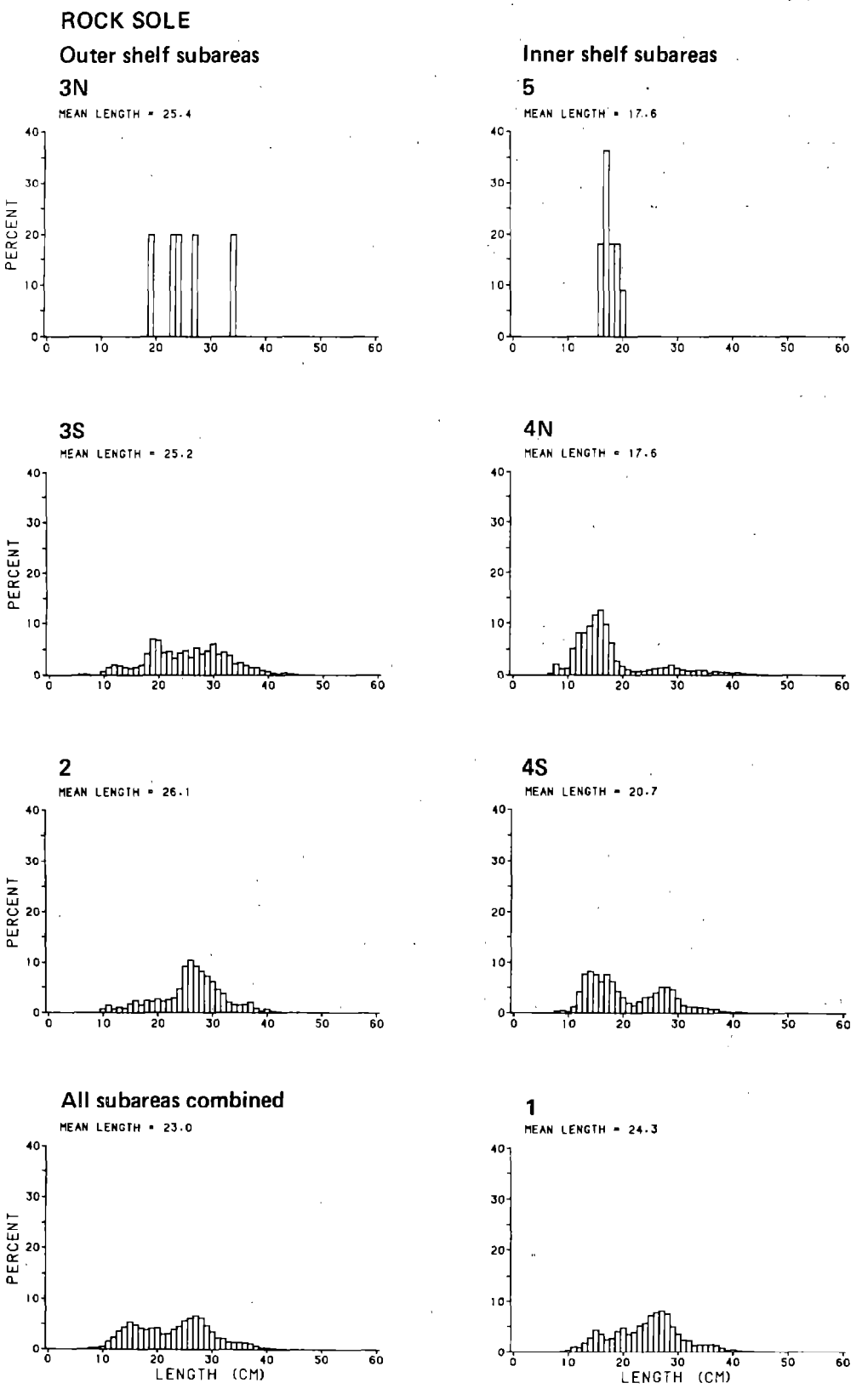

Figure 32.--Estimated relative size composition of the rock sole population sampled during the 1984 survey, by subarea and for the total survey area (sexes combined).

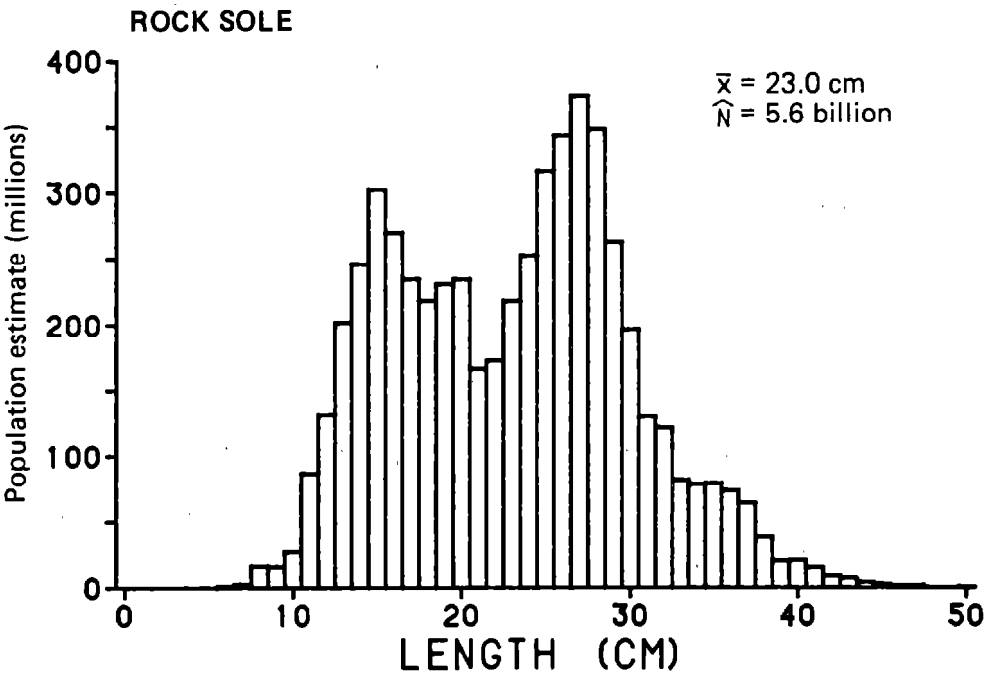

Figure 33.--Estimated size composition of the rock sole population sampled during the 1984 survey, in millions of fish (sexes combined).

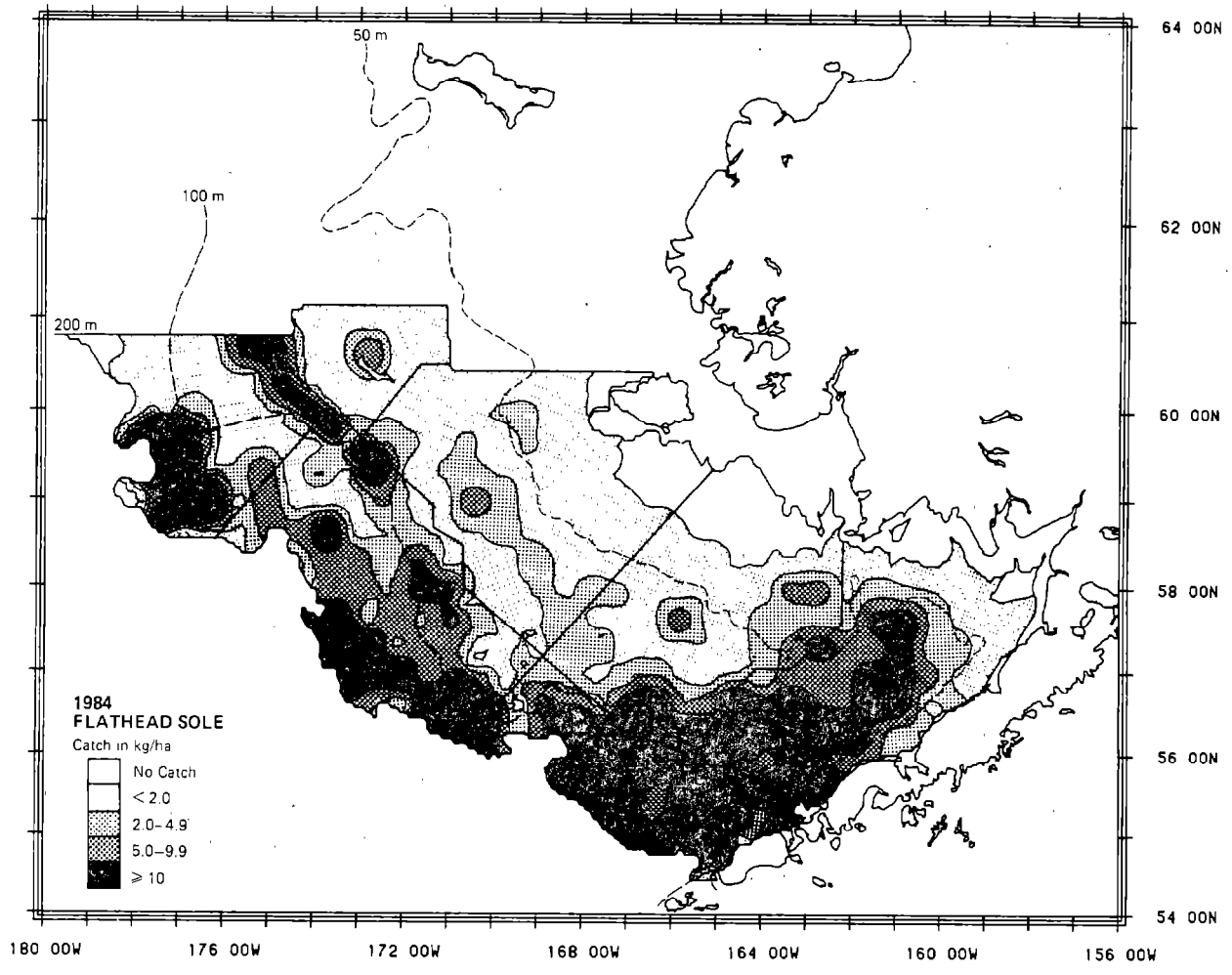

Figure 34.--Distribution and relative abundance in kg/ha of flathead sole and Bering flounder during the 1984 survey.

Table 23.--Abundance estimates and mean size of flathead sole and Bering flounder by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^6)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	7.85	61,815	0.181	260	0.138	0.238	27.80
2	19.78	120,398	0.353	776	0.411	0.155	23.37
3N	11.52	55,333	0.162	179	0.095	0.309	29.34
3S	8.07	65,338	0.192	437	0.232	0.149	23.57
4N	1.28	11,754	0.034	81	0.043	0.145	21.12
4S	2.65	21,632	0.063	131	0.069	0.166	23.78
5	2.01	4,595	0.013	22	0.012	0.208	26.37
All subareas combined[b]	7.34	340,865		1,886		0.181	24.56
95% confidence interval		282,903-398,827		1,613-2,159			

[a]Variances of abundance estimates are given in Appendix C-6.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

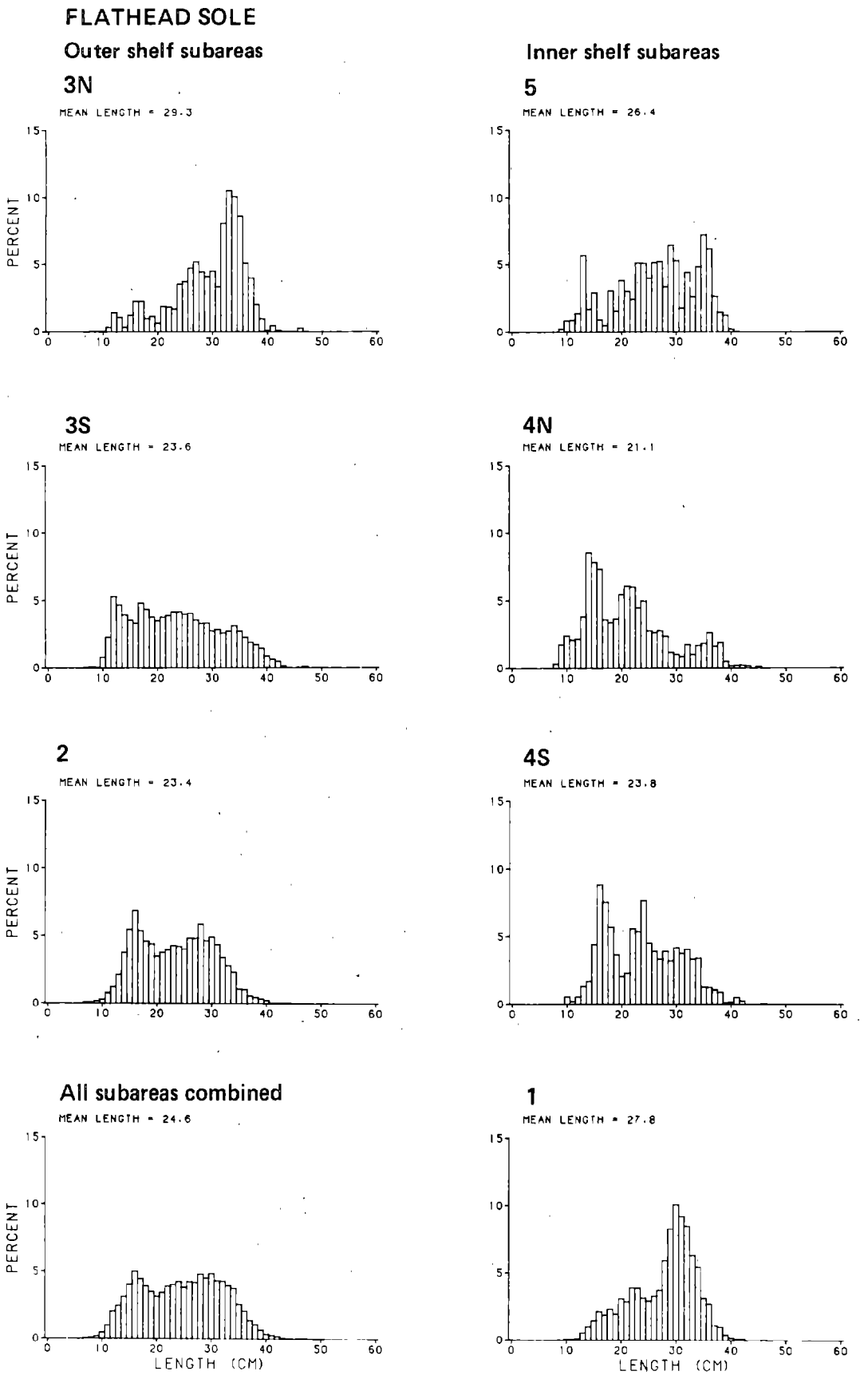

Figure 35.--Estimated relative size composition of the flathead sole and Bering flounder population sampled during the 1984 survey, by subarea and for the total survey area (sexes combined).

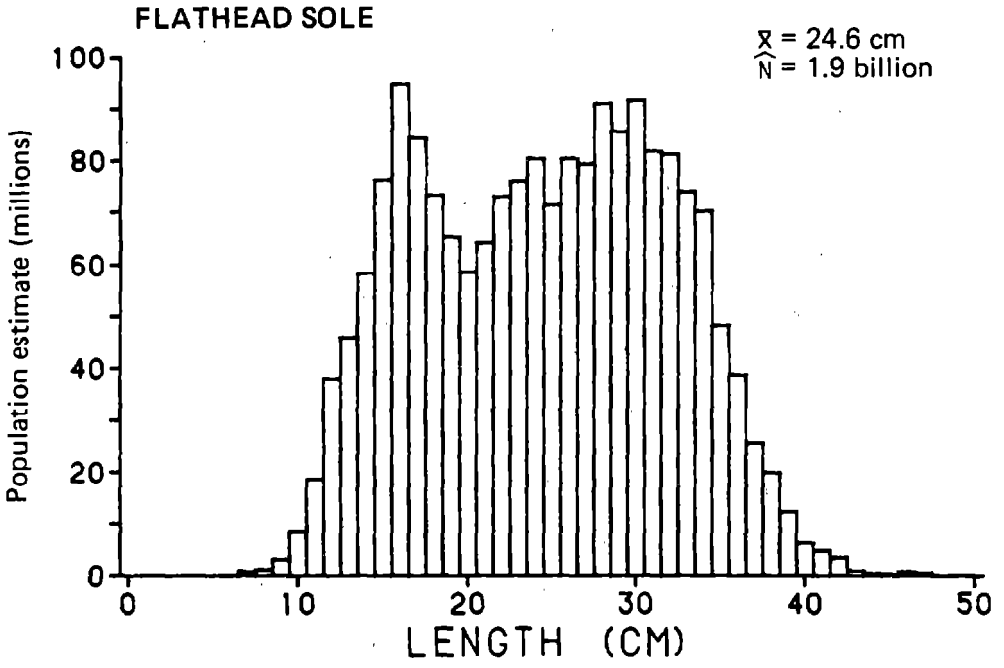

Figure 36.--Estimated size composition of the flathead sole and Bering flounder population sampled during the 1984 survey, in millions of fish (sexes combined).

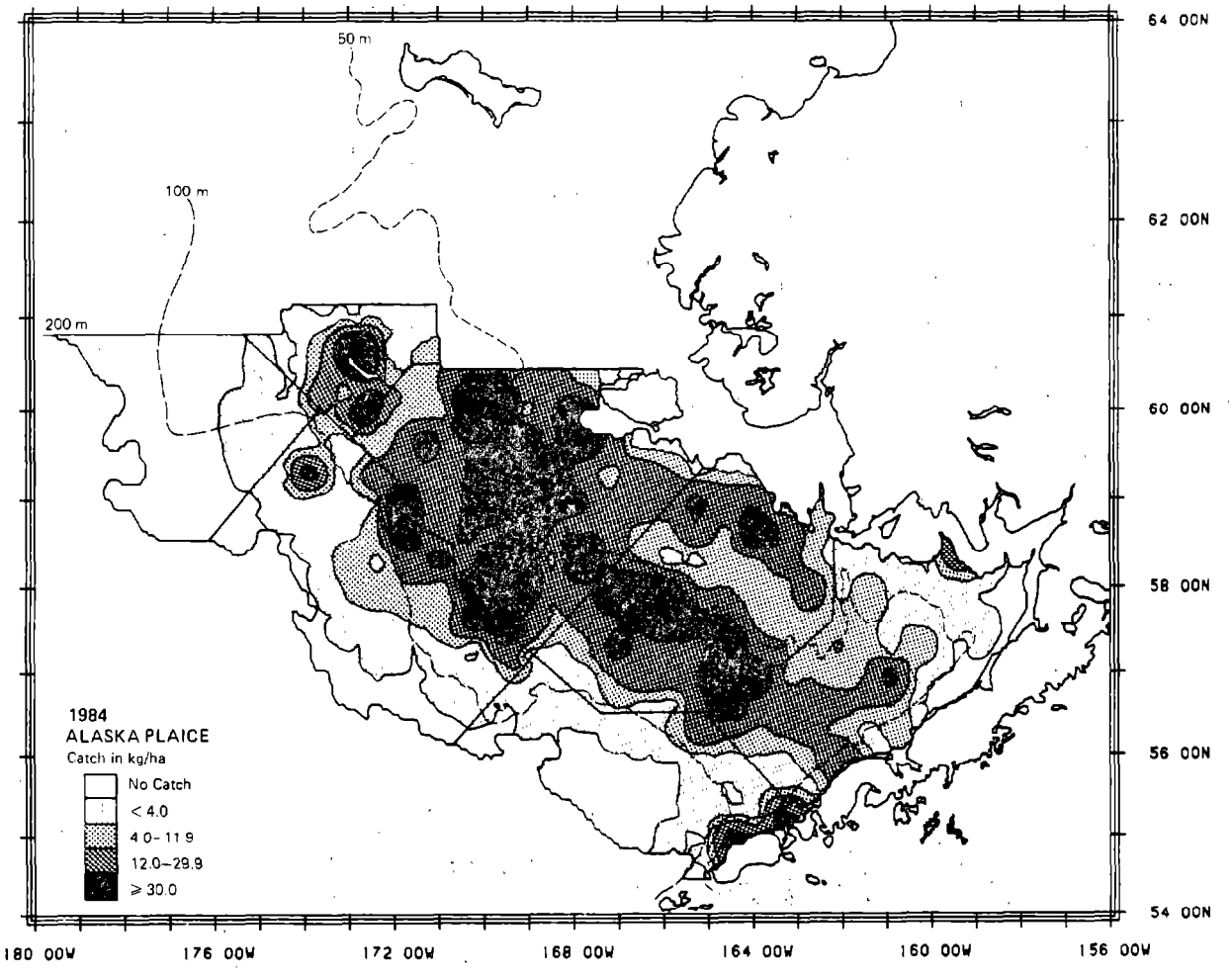

Figure 37.--Distribution and relative abundance in kg/ha of Alaska plaice during the 1984 survey.

Table 24.--Abundance estimates and mean size of Alaska plaice by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^6)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	9.20	72,395	0.100	128	0.095	0.565	36.30
2	3.03	18,466	0.025	34	0.025	0.544	37.91
3N	0.09	445	0.001	<1	<0.001	1.015	--
3S	6.61	53,465	0.074	63	0.047	0.849	38.04
4N	41.96	384,804	0.529	758	0.563	0.507	33.67
4S	20.02	163,199	0.225	323	0.240	0.505	33.79
5	14.91	34,073	0.047	40	0.030	0.847	39.28
All subareas combined[b]	15.64	726,846		1,347		0.540	34.34
95% confidence interval		531,645-922,047		996-1,699			

[a]Variances of abundance estimates are given in Appendix C-7.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

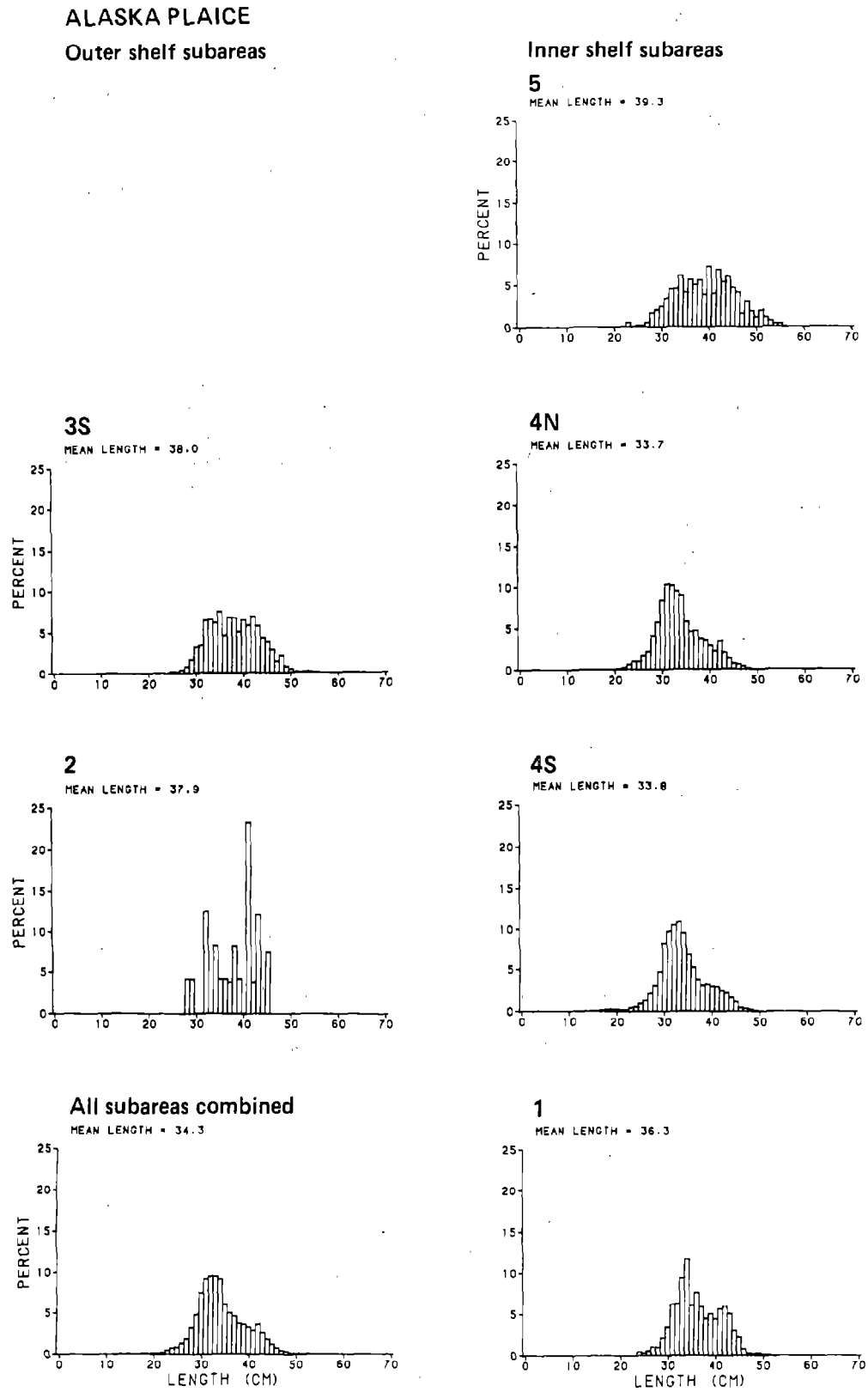

Figure 38. --Estimated relative size composition of the Alaska plaice population sampled during the 1984 survey, by subarea and for the total survey area (sexes combined).

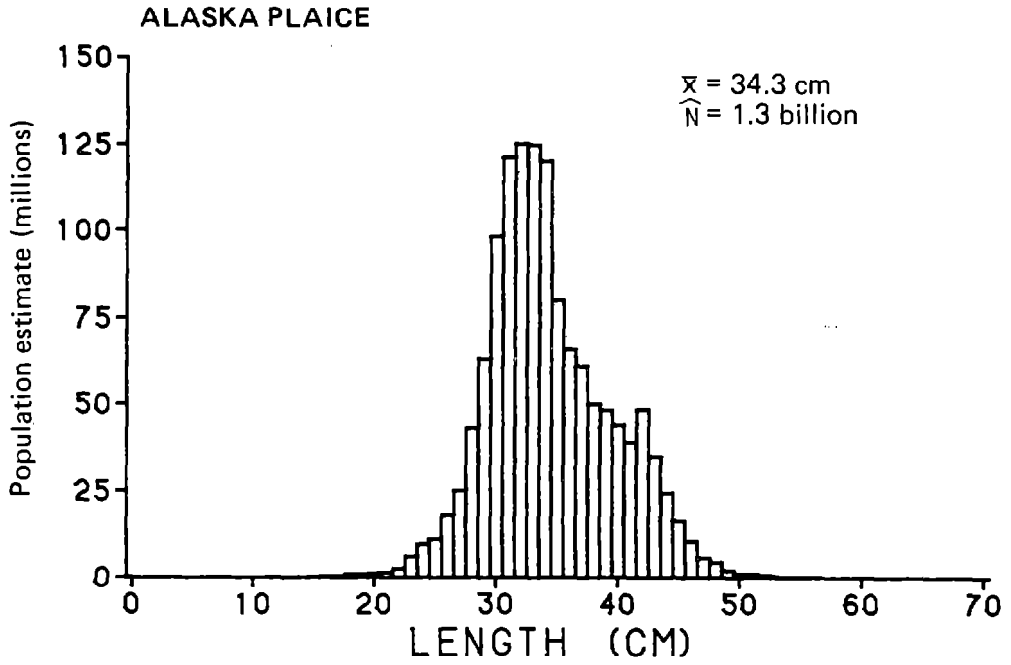

Figure 39.--Estimated size composition of the Alaska plaice population sampled during the 1984 survey, in millions of fish (sexes combined).

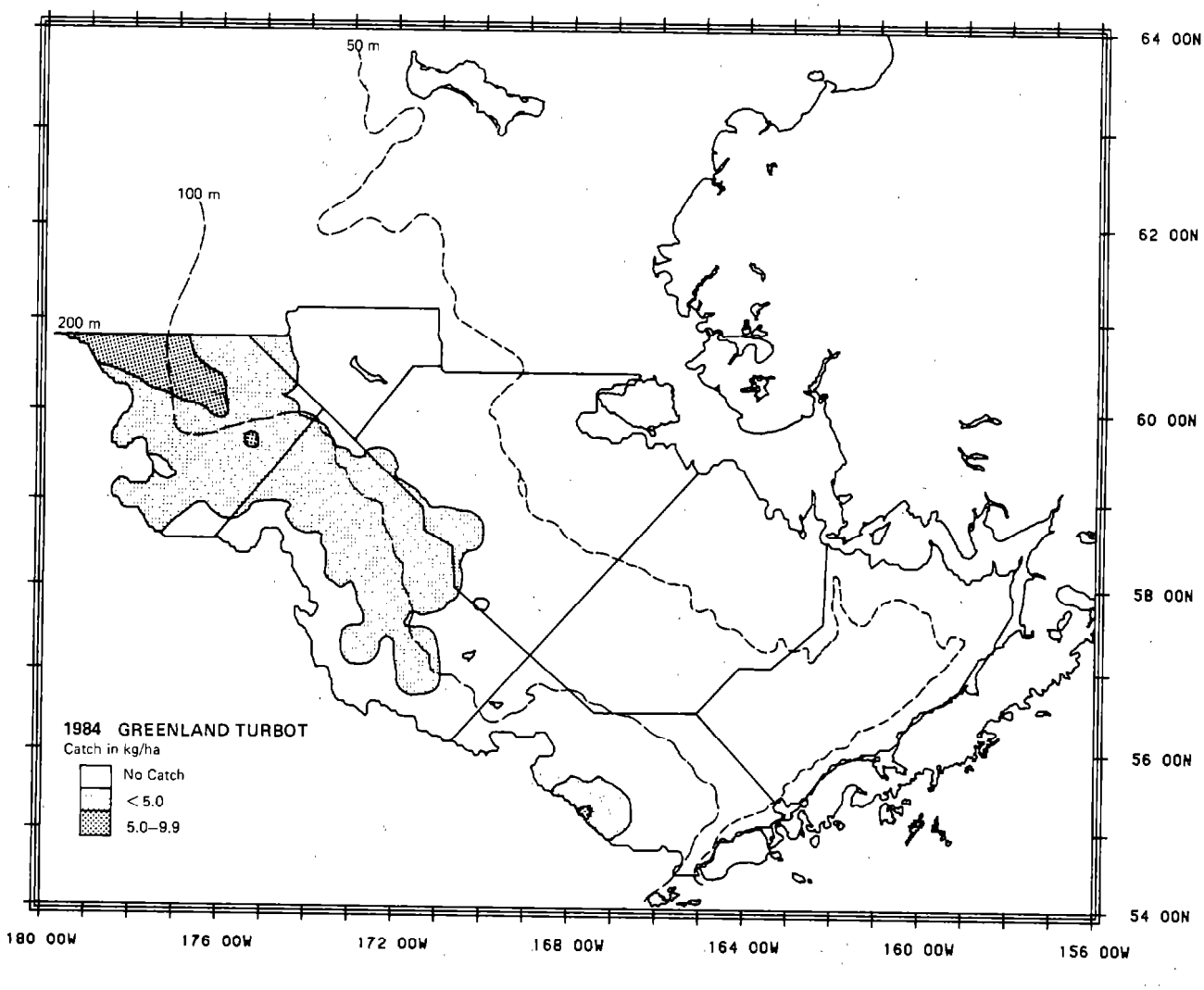

Figure 40.--Distribution and relative abundance in kg/ha of Greenland turbot during the 1984 survey.

Table 25.--Abundance estimates and mean size of Greenland turbot by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^3)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	0	0	0	0	0	--	--
2	0.15	892	0.050	191	0.009	4.667	--
3N	2.73	13,126	0.733	17,799	0.801	0.737	42.11
3S	0.45	3,646	0.204	3,867	0.174	0.943	46.78
4N	0.02	160	0.009	216	0.010	0.742	48.25
4S	<0.01	12	0.001	32	0.001	0.363	--
5	0.03	66	0.004	116	0.005	0.567	41.25
All subareas combined[b]	0.39	17,901		22,221		0.806	42.98
95% confidence interval		13,183-22,619		16,043-28,399			

[a]Variances of abundance estimates are given in Appendix C-8.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

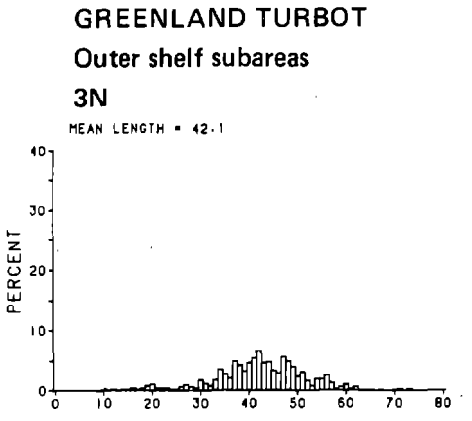

Figure 41 .--Estimated relative size composition of the Greenland turbot population sampled during the 1984 survey, subarea 3N (sexes combined). (Sample sizes in the remaining subareas were insufficient to provide meaningful size-composition estimates. 1

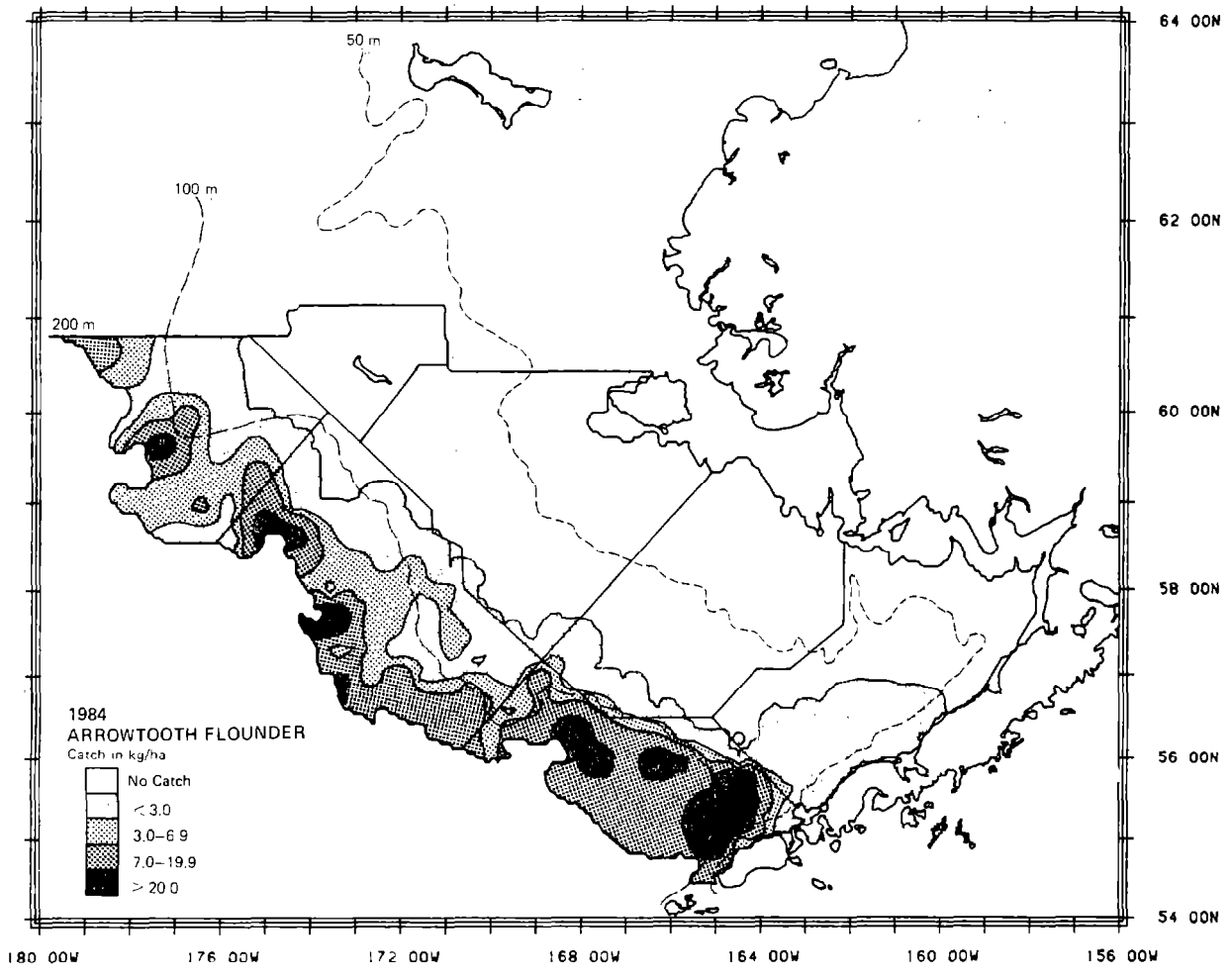

Figure 42. --Distribution and relative abundance in kg/ha of arrowtooth and Kamchatka flounder during the 1984 survey.

Table 26.--Abundance estimates and mean size of arrowtooth and Kamchatka flounders by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^3)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	0.23	1,798	0.010	5,219	0.009	0.345	--
2	18.13	110,398	0.604	338,988	0.613	0.326	31.80
3N	3.80	18,249	0.100	24,390	0.044	0.748	41.79
3S	6.24	50,529	0.276	174,046	0.315	0.290	30.18
4N	<0.01	22	<0.001	493	0.001	0.045	--
4S	0.23	1,882	0.010	10,130	0.018	0.186	28.24
5	0	0	0	0		0	--
All subareas combined[b]	3.94	182,877		553,265		0.331	31.67
95% confidence interval		138,604-227,157		421,283-685,247			

[a]Variances of abundance estimates are given in Appendix C-9.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

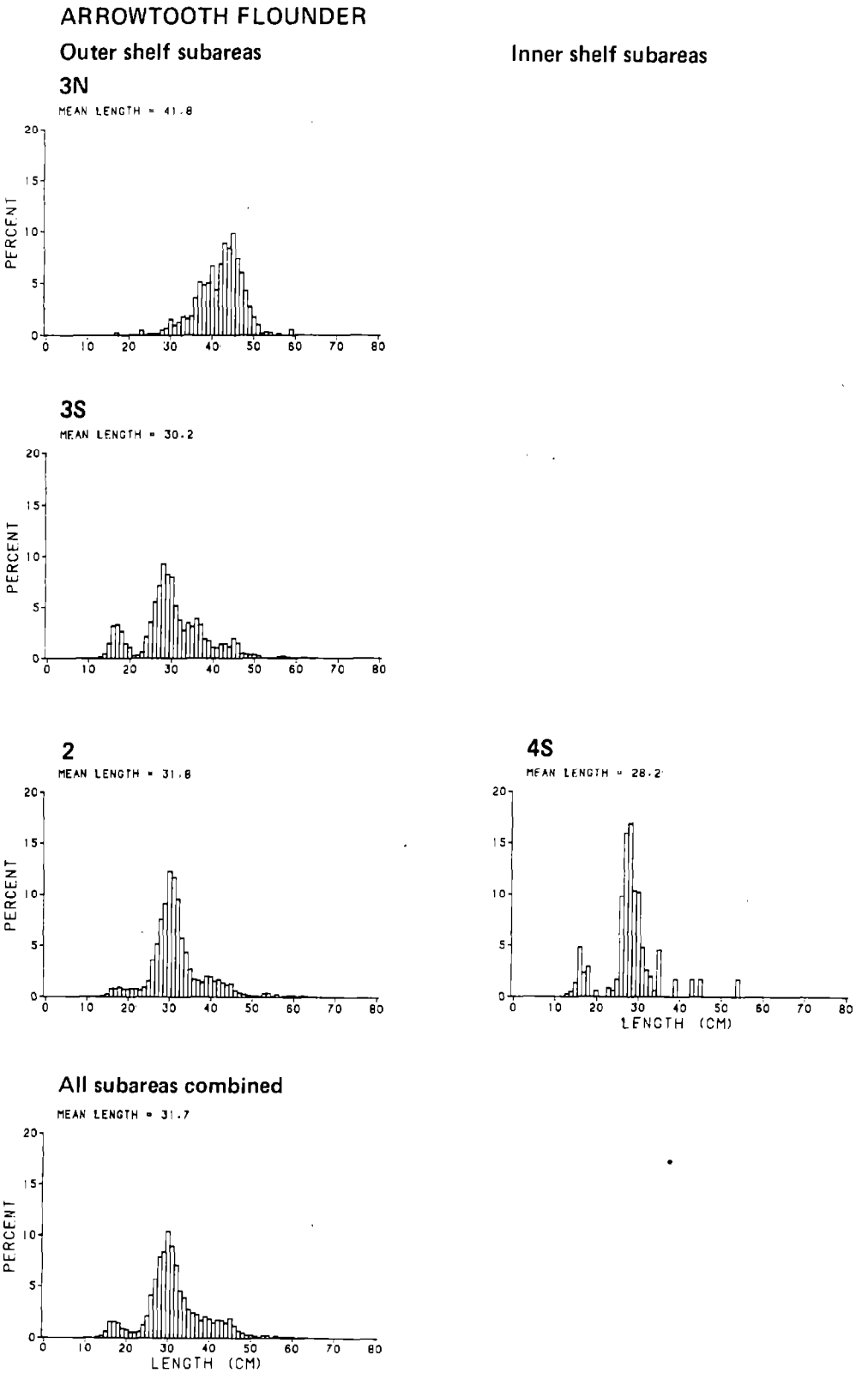

Figure 43.--Estimated relative size composition of the arrowtooth and Kamchatka flounder population sampled during the 1984 swey, by subarea and for the total survey area (sexes combined).

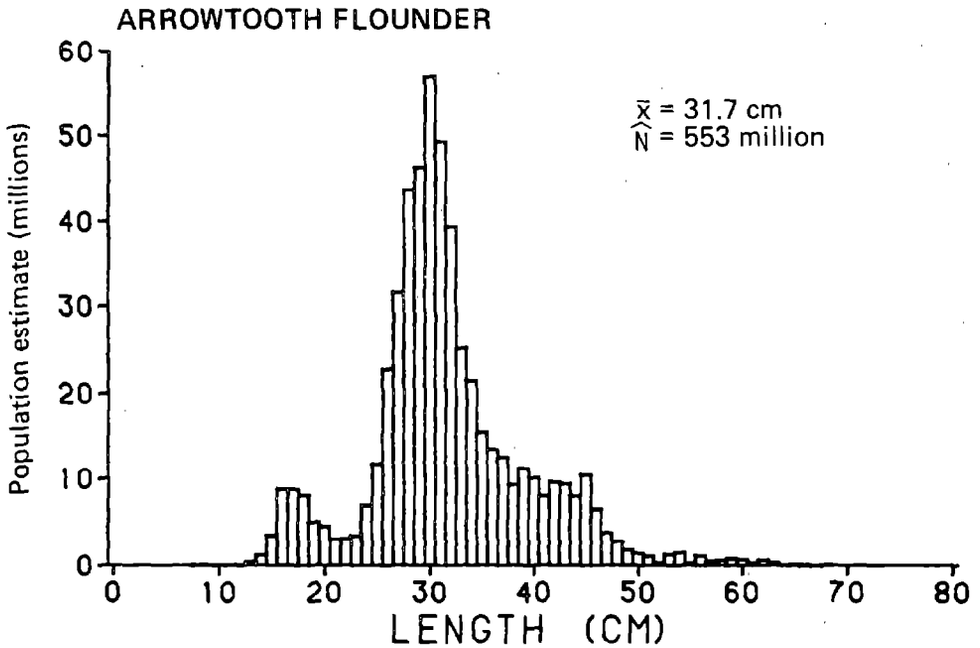

Figure 44. --Estimated size composition of the arrowtooth and Kamchatka flounder population sampled during the 1984 survey, in millions of fish (sexes combined).

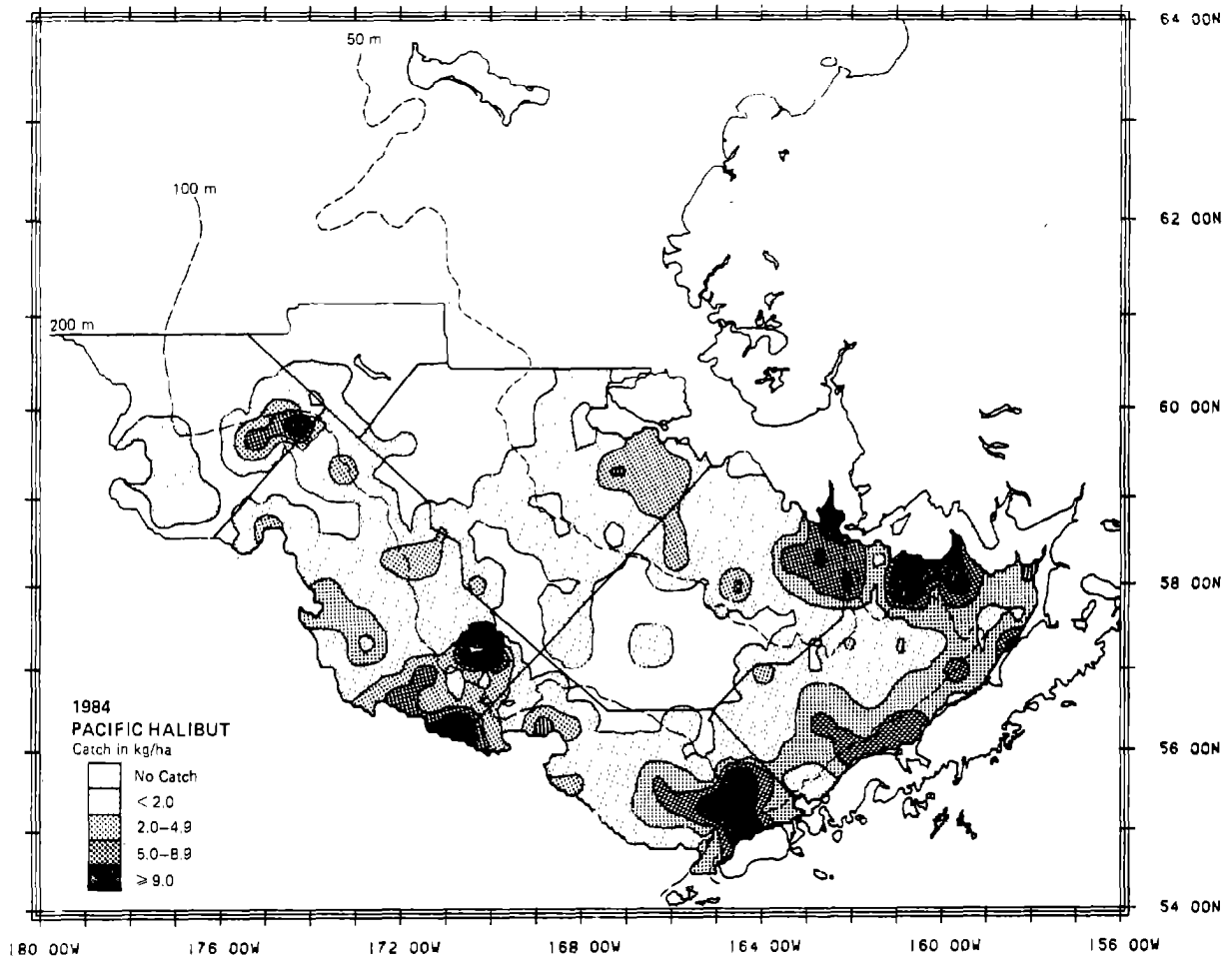

Figure 45.--Distribution and relative abundance in kg/ha of Pacific halibut during the 1984 survey.

Table 27.--Abundance estimates and mean size of Pacific halibut by subarea and subareas combined, 1984 bottom trawl survey.

Subarea	Mean CPUE[a] (kg/ha)	Estimated apparent biomass[a] (t)	Proportion of total estimated biomass	Estimated apparent population[a] (10^6)	Proportion of total estimated population	Mean size per individual	
						Weight (kg)	Length (cm)
1	4.05	31,918	0.355	13,564	0.401	2.353	55.81
2	3.41	20,741	0.230	5,833	0.172	3.556	63.54
3N	0.72	3,465	0.038	507	0.015	6.835	62.96
3S	2.67	21,643	0.240	8,734	0.258	2.478	55.22
4N	0.54	4,912	0.055	2,184	0.064	2.249	56.21
4S	0.89	7,245	0.080	2,906	0.086	2.493	58.62
5	0.04	84	0.001	136	0.004	0.618	38.77
All subareas combined[b]	1.94	90,008		33,865		2.658	57.30
95% confidence level		69,203-110,810		26,063-41,668			

[a]Variances of abundance estimates are given in Appendix C-10.

[b]Minor discrepancies between sums over subareas and totals may occur due to rounding.

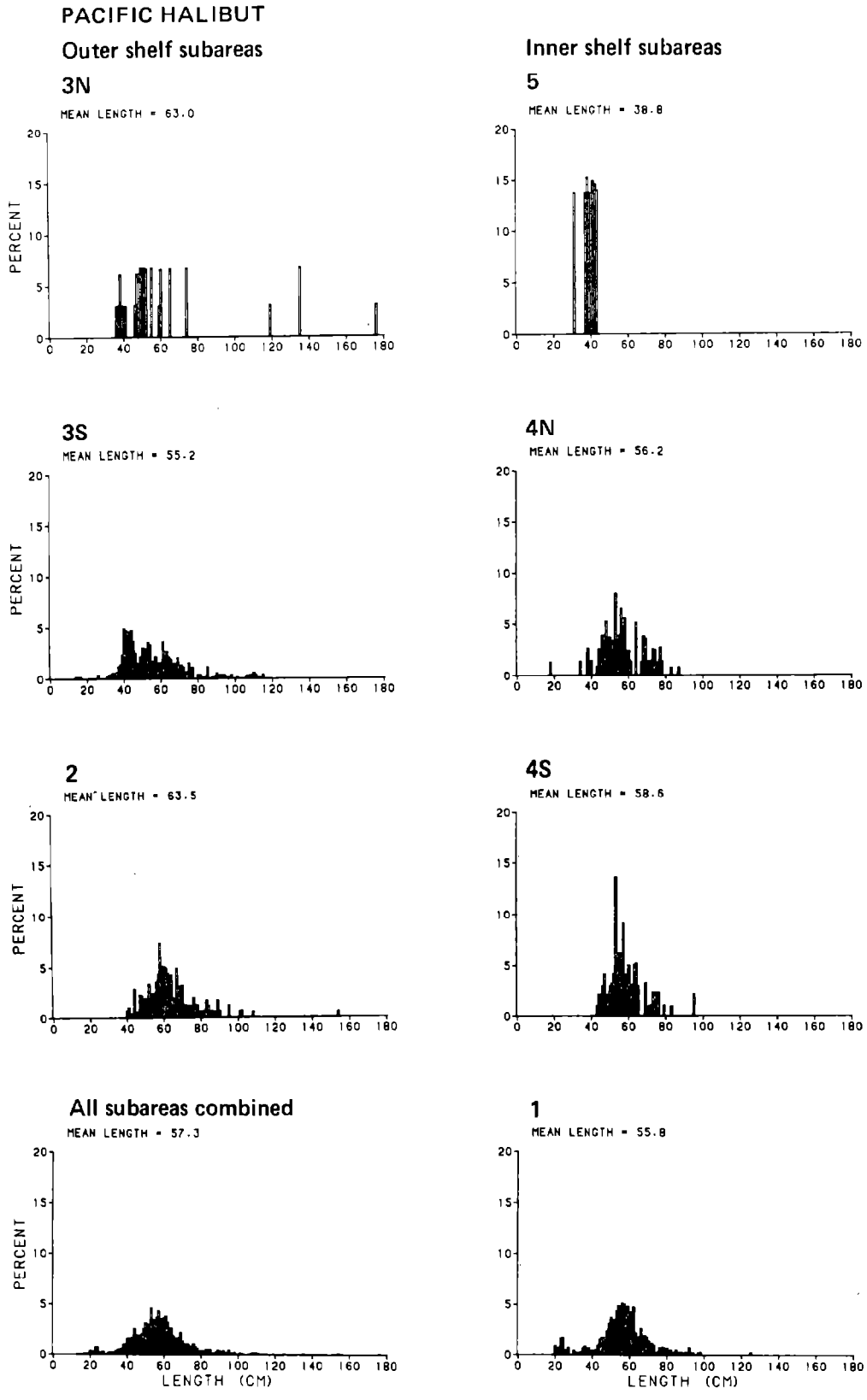

Figure 46.--Estimated relative size composition of the Pacific halibut population sampled during the 1984 survey, by subarea and for the total survey area (sexes combined).

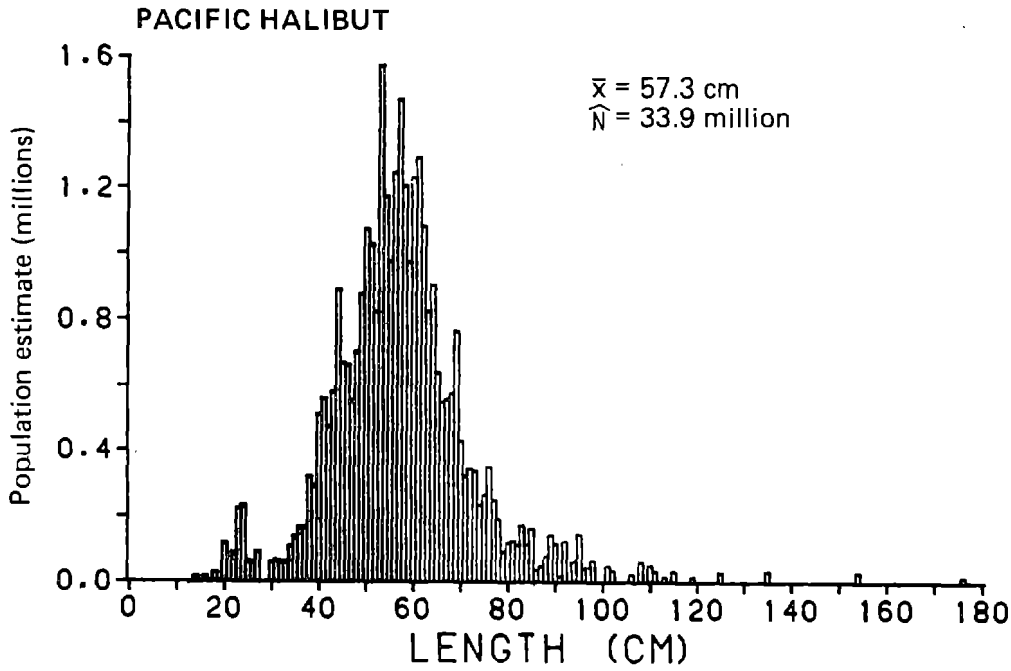

Figure 47.--Estimated size composition of the Pacific halibut population sampled during the 1984 survey, in millions of fish (sexes combined).

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APPENDIX A

Station and Catch Data, 1984 Eastern Bering Sea Trawl Survey

Appendix A contains computer listings of station and catch data for all successfully completed stations used in the analysis of 1984 Bering Sea survey data. Missing haul numbers indicate unsatisfactory tows (Alaska hauls 64 and 98) or non-station tows conducted for gear comparison (Chapman hauls 161-188 and 228-251, Alaska hauls 159-186) or special crab-assessment studies (Alaska hauls 187-209).

Latitudes and longitudes are given in degrees, minutes, and tenths of minutes. Gear depths are reported in meters, duration of tow in tenths of hours, and distance fished in nautical miles. A performance code of '0' indicates a satisfactory tow; a performance code of '1' indicates that the gear was hung up or ripped at some point during the haul, but that the catch was judged by the field party chief and the lead fisherman to have been unaffected. Gear code 37 represents the modified 83-112 eastern trawl. Catch weights are given in kilograms.

List of Tables

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Table A-1---Station and catch data for the NOAA ship Chapman.

HAUL #	1	2	3	4	5	6	7	8	9	10	11
MONTH/DAY/YEAR	6/ 9/84	6/10/84	6/10/84	6/10/84	6/10/84	6/11/84	6/11/84	6/11/84	6/11/84	6/12/84	6/12/84
LATITUDE START	57 18.0	57 39.1	57 59.3	58 19.6	58 0.4	57 40.4	57 20.5	57 0.1	56 41.2	56 19.0	56 59.1
LONGITUDE START	158 26.9	158 21.2	158 18.9	159 32.5	159 36.6	159 38.1	159 40.1	159 42.7	159 45.4	161 0.4	160 59.4
LATITUDE END	57 19.1	57 40.6	58 0.9	58 19.6	57 58.3	57 38.9	57 19.0	56 58.6	56 40.2	56 20.5	56 40.4
LONGITUDE END	158 24.9	158 21.5	158 18.2	159 35.4	159 36.7	159 38.8	159 39.8	159 42.7	159 47.4	161 0.6	160 59.2
LORAN START	33004.50	32873.60	32758.90	32774.40	32904.00	33027.00	33144.30	33259.20	33360.50	33642.30	33544.40
LORAN START	45434.50	45397.00	45338.60	45877.00	45899.40	45908.10	45923.60	45946.90	45972.90	46483.50	46468.30
LORAN END	32994.70	32870.80	32748.60	32780.00	32913.50	33036.90	33151.90	33266.70	33370.10	33635.90	33537.30
LORAN END	45421.30	45399.00	45385.70	45895.50	45899.60	45912.50	45921.90	45947.50	45987.20	46484.40	46467.00
GEAR DEPTH	17	20	21	14	23	28	32	32	21	30	40
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.53	1.55	1.58	1.51	1.50	1.54	1.52	1.48	1.54	1.55	1.43
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	25.4	0.9	311.0	1.3	21.0	1254.8	50.3	2575.8	804.3	2572.2	0.0
PAC COD	544.5	99.3	940.6	46.0	237.7	144.2	152.4	111.8	139.1	326.9	12.3
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	2.9	9.5	38.2	0.0	0.0	0.0	0.7	0.0	192.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	4.1	7.3	1.7	36.8	27.9	0.0	1.8	1.3	1.1	1.1	34.6
EELPOUTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RNDFISH	0.8	0.3	5.6	1.3	2.8	2.9	0.6	0.6	0.1	1.1	3.1
TOT ROUNDFISH	577.7	117.3	1297.1	85.4	289.4	1401.8	205.8	2689.5	1186.6	2901.4	50.0
YELLOW SOLE	377.8	67.1	179.0	983.3	755.4	185.2	55.6	204.8	139.1	342.7	814.9
ROCK SOLE	150.5	133.8	199.2	90.4	312.0	439.3	416.2	329.2	313.5	616.5	668.9
FLATHEAD SOLE	0.0	0.5	0.0	0.8	4.4	4.8	13.6	5.0	8.8	9.1	47.7
ALASKA PLAICE	0.0	0.0	0.0	92.9	0.0	1.9	0.3	0.0	0.0	22.6	55.3
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.3
PAC HALIBUT	54.8	7.8	23.6	30.8	48.3	19.5	12.3	35.2	4.5	39.6	12.5
OTHER FLTFISH	89.9	10.7	0.0	70.3	10.6	15.2	4.3	0.0	7.3	1.6	0.5
TOT FLATFISH	1173.1	219.9	400.8	1268.6	1130.7	665.9	502.3	574.3	473.3	1033.2	1600.1
SKATES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.9	0.0
TOT ELASMOBRH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.9	0.0
RED KING CRAB	0.0	1.8	0.0	3.6	6.1	20.9	10.2	18.6	1.8	12.0	718.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	0.0	2.3	11.1	5.0	1.6	4.3	22.5
TANNER, OPILIO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	4.9	0.2	2.9	0.8	1.3	0.2	2.6	4.9	2.3	22.3	22.9
SNAILS	0.0	0.0	1.4	0.2	0.0	0.1	1.1	0.0	0.0	2.4	1.5
SHRIMP	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
STARFISH	209.2	81.2	17.1	151.0	48.9	133.7	73.7	295.3	202.8	61.1	38.4
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	0.2	0.7	4.1	1.0	12.3	11.9	110.7	63.0	29.6	49.8	130.4
TOTAL INVERTS	214.3	84.0	25.4	156.7	69.1	169.1	209.5	386.8	238.2	151.9	933.7
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1965.1	421.1	1723.4	1510.7	1489.2	2236.8	917.6	3650.6	1898.0	4111.4	2583.9

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	12	13	14	15	16	17	18	19	20	21	22
MONTH/DAY/YEAR	6/12/84	6/12/84	6/12/84	6/13/84	6/13/84	6/13/84	6/13/84	6/14/84	6/14/84	6/14/84	6/14/84
LATITUDE START	56 59.1	57 18.9	57 38.9	57 59.1	58 19.0	58 19.7	58 0.6	57 40.4	57 19.9	56 59.9	56 40.3
LONGITUDE START	160 57.5	160 56.7	160 53.9	160 52.2	160 45.6	162 2.1	162 7.2	162 9.8	162 9.8	162 10.6	162 12.4
LATITUDE END	57 0.6	57 20.3	57 40.5	58 0.7	58 20.4	58 19.5	57 59.1	57 39.4	57 19.0	56 58.6	56 38.9
LONGITUDE END	160 57.8	160 57.7	160 54.4	160 53.1	160 44.9	162 4.9	162 8.0	162 8.3	162 7.7	162 9.1	162 11.1
LORAN START	33437.40	33326.20	33202.10	33072.00	32926.30	33089.00	33234.70	33374.10	33499.40	33615.30	33722.20
LORAN START	46448.90	46436.40	46411.70	46395.40	46348.70	46841.30	46886.60	46914.30	46925.20	46938.90	46957.30
LORAN END	33430.20	33320.80	33193.90	33063.60	32914.90	33096.80	33246.20	33376.50	33499.70	33619.20	33725.60
LORAN END	46450.00	46443.10	46414.50	46400.80	46343.70	46859.40	46892.10	46905.40	46911.40	46929.40	46949.00
GEAR DEPTH	37	34	31	26	12	27	21	27	29	35	41
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.49	1.45	1.54	1.47	1.52	1.48	1.48	1.32	1.51	1.48	1.49
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	893.2	518.0	46.7	111.5	0.0	94.1	27.7	5544.9	29.3	15.0	422.3
PAC COD	9.3	49.4	88.9	289.3	29.5	384.1	298.5	173.6	121.2	9.1	15.9
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.1	0.7	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.2
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	15.0	0.0	0.0	12.2	0.6	16.2	7.3	0.5	1.0	0.0	1.8
EELPOUTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RNDFISH	0.1	0.7	0.2	0.5	1.3	3.5	0.7	0.0	0.1	0.2	0.0
TOT ROUNDFISH	917.7	568.8	135.8	413.6	46.0	497.9	334.1	5719.0	151.7	24.2	440.2
YELLOW SOLE	1295.2	155.1	429.6	1451.5	1364.6	432.5	235.9	152.7	419.2	357.4	298.5
ROCK SOLE	533.1	141.5	125.2	253.8	37.6	245.0	196.9	46.3	315.9	221.4	116.1
FLATHEAD SOLE	49.6	44.0	58.1	8.6	0.0	2.1	4.1	6.9	30.8	27.7	24.9
ALASKA PLAICE	176.3	7.3	16.3	11.9	0.0	3.5	9.1	23.1	60.6	28.1	77.6
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	8.5	9.3	9.9	90.6	77.9	40.0	44.9	3.6	10.3	5.2	10.2
OTHER FLTFISH	4.0	0.0	0.1	11.0	32.0	44.2	10.4	3.5	21.0	65.3	0.9
TOT FLATFISH	2068.1	357.2	639.1	1826.5	1512.1	767.4	501.1	236.2	857.9	705.1	528.2
SKATES	11.2	0.0	0.0	0.0	0.0	0.0	22.7	6.9	14.9	0.0	5.0
TOT ELASMOBR	11.2	0.0	0.0	0.0	0.0	0.0	22.7	6.9	14.9	0.0	5.0
RED KING CRAB	14.3	5.0	18.1	2.7	0.0	4.8	3.6	14.1	111.1	25.4	5.4
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	10.0	12.5	6.4	0.1	0.0	0.0	0.1	1.1	1.8	8.4	2.7
TANNER, OPILIO	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.5	2.5
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	1.3	0.5	1.6	4.0	1.8	3.5	3.8	0.2	1.2	0.7	2.1
SNAILS	0.0	0.1	4.2	2.8	0.0	1.4	5.0	0.5	2.3	0.3	0.7
SHRIMP	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
STARFISH	1.9	0.0	1.4	105.4	93.0	283.7	145.1	11.6	33.9	4.5	2.7
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	97.0	83.2	111.2	13.1	3.0	2.1	10.9	0.2	17.3	14.1	218.8
TOTAL INVERTS	124.4	106.7	142.9	128.2	97.8	295.6	168.6	27.7	168.8	55.9	235.0
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	3121.5	1032.7	917.8	2368.3	1655.8	1560.8	1026.4	5989.8	1193.2	785.3	1209.3

Table A-1. --Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	23	24	25	26	27	28	29	30	31	32	33
MONTH/DAY/YEAR	6/15/84	6/15/84	6/15/84	6/15/84	6/16/84	6/16/84	6/16/84	6/16/84	6/16/84	6/17/84	6/17/84
LATITUDE START	56 20.4	56 0.7	55 20.8	55 39.3	55 59.4	56 19.2	56 39.0	56 59.2	57 19.1	57 39.2	58 0.7
LONGITUDE START	162 12.3	162 15.5	163 25.2	163 24.2	163 24.1	163 25.2	163 23.4	163 23.1	163 23.2	163 22.4	163 25.8
LATITUDE END	56 18.9	55 59.3	55 19.4	55 40.8	56 0.9	56 20.7	56 40.5	57 0.6	57 20.7	57 40.6	58 1.0
LONGITUDE END	162 12.5	162 15.8	163 26.2	163 24.3	163 24.7	163 25.9	163 23.3	163 23.4	163 23.6	163 22.0	163 23.5
LORAN START	33817.40	33911.70	34241.00	34175.90	34099.30	34018.60	33919.70	33813.40	33698.00	33568.70	33429.70
LORAN START	46961.40	46985.50	47430.90	47431.90	47436.70	47446.10	47432.80	47425.70	47416.50	47397.00	47400.20
LORAN END	33824.60	33918.40	34247.90	34170.90	34095.10	34013.90	33911.90	33806.00	33689.90	33558.30	33421.60
LORAN END	46962.60	46987.50	47436.30	47433.30	47440.80	47451.10	47431.70	47426.80	47418.20	47393.10	47385.00
GEAR DEPTH	43	41	28	45	51	49	43	38	30	27	25
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.53	1.54	1.47	1.50	1.47	1.55	1.48	1.50	1.51	1.50	1.61
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	71.7	353.4	1076.8	1263.0	2874.5	750.2	90.3	31.3	92.1	22.8	55.0
PAC COD	36.3	75.0	69.3	18.2	71.8	61.7	18.6	5.0	36.7	27.9	36.7
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	5.4	13.9	14.5	10.4	0.0	2.7	0.8	0.0	0.8	2.5	2.0
EELPOUTS	0.0	0.0	0.0	0.0	0.0	2.0	0.2	0.0	0.0	0.0	0.0
OTHER RNDFISH	0.0	0.9	1.0	0.0	0.0	0.5	0.1	0.1	0.2	0.6	1.5
TOT ROUNDFISH	113.4	443.8	1162.0	1291.7	2946.3	817.2	110.3	36.4	129.9	53.7	95.2
YELLOW SOLE	346.5	437.0	483.7	113.4	36.6	404.2	329.3	343.4	826.0	966.6	1627.6
ROCK SOLE	492.1	288.1	14.4	84.7	14.9	95.3	56.7	5.9	293.9	188.5	53.3
FLATHEAD SOLE	110.7	23.0	217.8	36.5	36.6	82.1	68.5	28.1	21.3	11.4	21.7
ALASKA PLAICE	47.6	121.6	167.2	2.6	9.5	62.6	69.9	51.3	60.3	36.7	28.3
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	1.4	6.4	0.2	15.6	0.1	3.9	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	23.2	27.3	13.9	5.8	13.6	6.1	5.5	2.8	2.0	0.0	12.0
OTHER FLTFISH	0.5	6.7	4.0	0.0	0.7	1.0	0.0	0.0	0.4	15.8	4.2
TOT FLATFISH	1022.0	910.1	901.2	258.6	111.9	659.2	529.9	431.5	1204.0	1219.1	1747.1
SKATES	17.7	30.5	73.4	19.5	0.0	25.9	8.6	3.6	0.0	0.0	13.3
TOT ELASMOBRH	17.7	30.5	73.4	19.5	0.0	25.9	8.6	3.6	0.0	0.0	13.3
RED KING CRAB	56.7	106.9	6.1	1.4	0.0	1.8	0.0	1.4	11.8	4.5	11.3
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	2.5	3.2	1.6	3.6	2.9	1.1	0.5	0.0	1.1	0.0	0.0
TANNER, OPILIO	1.8	5.0	1.4	1.6	1.8	1.6	2.7	3.2	1.4	0.5	0.0
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
OTHER CRAB	4.5	12.8	8.0	27.9	16.9	3.7	2.3	14.3	18.8	12.9	25.7
SNAILS	3.7	0.1	0.9	14.5	12.3	8.5	14.6	10.1	31.7	58.4	71.3
SHRIMP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
STARFISH	27.7	129.6	101.1	0.6	0.0	0.0	0.0	0.1	6.8	22.1	21.7
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	53.6	26.5	22.0	29.3	85.5	8.3	4.5	27.9	42.7	12.9	4.7
TOTAL INVERTS	150.4	283.9	140.9	83.9	119.1	30.0	25.0	56.9	114.4	111.3	204.8
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1303.5	1668.4	2277.5	1653.8	3177.2	1532.2	673.9	528.4	1448.3	1384.1	2060.5

Table A-1--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	34	35	36	37	38	39	40	41	42	43	44
MONTH/DAY/YEAR	6/17/84	6/17/84	6/17/84	6/18/84	6/18/84	6/18/84	6/18/84	6/18/84	6/19/84	6/19/84	6/19/84
LATITUDE START	58 19.3	58 39.2	58 59.1	59 19.4	58 58.6	58 40.8	58 20.8	58 0.8	57 40.6	57 20.6	57 0.6
LONGITUDE START	163 22.4	163 21.1	163 21.1	164 38.0	164 43.0	164 39.4	164 38.3	164 37.5	164 37.8	164 38.9	164 35.7
LATITUDE END	58 20.9	58 40.7	59 0.6	59 19.3	58 56.9	58 39.4	58 19.4	57 59.3	57 39.2	57 19.1	56 59.2
LONGITUDE END	163 22.7	163 21.2	163 21.2	164 41.2	164 43.5	164 39.3	164 37.8	164 37.8	164 37.1	164 39.1	164 35.1
LORAN START	33292.70	33123.20	32958.20	32941.10	33147.80	33298.80	33465.50	33621.30	33769.20	33904.30	34014.00
LORAN START	47357.60	47325.20	47298.60	47717.20	47792.90	47806.40	47839.40	47866.50	47895.20	47921.30	47911.90
LORAN END	33271.90	33111.60	32945.70	32949.00	33164.70	33308.70	33475.80	33633.40	33775.70	33914.80	34020.20
LORAN END	47358.10	47324.10	47297.00	47735.50	47799.50	47804.80	47838.50	47870.70	47891.70	47923.80	47909.70
GEAR DEPTH	24	18	13	12	16	23	25	25	30	37	40
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.47	1.48	1.52	1.51	1.54	1.53	1.51	1.51	1.49	1.57	1.47
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	71.9	3.6	2.3	0.0	0.1	0.4	13.8	9.5	115.7	37.6	16.3
PAC COD	118.9	35.4	108.0	141.5	47.2	71.7	36.8	103.0	311.3	10.4	0.2
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	1.1	21.8	0.2	0.6	3.4	0.0	0.0	0.1	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	59.1	29.7	39.0	18.3	25.6	16.1	5.7	3.3	4.6	0.0	0.0
EELPOUTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.5
OTHER RNDFISH	1.6	1.5	1.9	5.4	1.6	3.0	3.0	0.1	1.5	0.1	0.1
TOT ROUNDFISH	251.6	75.2	152.3	187.0	74.7	91.8	62.9	115.9	433.1	49.6	17.2
YELLOW SOLE	1100.8	629.1	280.8	437.6	348.8	1560.5	951.7	395.1	1650.0	429.1	344.7
ROCK SOLE	214.4	144.2	89.4	19.5	46.3	13.2	29.2	104.8	50.5	4.5	2.3
FLATHEAD SOLE	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.3	3.6	7.3
ALASKA PLAICE	101.0	128.4	3.2	18.6	97.5	41.0	20.0	56.2	137.7	361.5	221.8
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	38.1	4.4	2.4	0.0	2.0	3.4	2.8	25.0	0.0	0.0	0.0
OTHER FLTFISH	11.1	11.8	15.9	6.8	42.6	4.4	1.9	6.8	0.0	0.0	0.0
TOT FLATFISH	1465.4	917.9	391.6	532.5	537.2	1622.4	1005.5	588.0	1940.5	798.8	576.1
SKATES	0.0	0.0	0.0	0.0	0.0	5.1	10.8	0.0	18.4	0.0	0.5
TOT ELASMOBRH	0.0	0.0	0.0	0.0	0.0	5.1	10.8	0.0	18.4	0.0	0.5
RED KING CRAB	10.0	1.1	0.0	0.0	0.0	5.4	10.7	1.8	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
TANNER, OPILIO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.1	16.4	6.4
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	3.9	7.0	1.5	5.5	10.6	5.3	13.8	15.6	111.4	29.1	3.1
SNAILS	0.4	0.1	0.0	0.0	0.1	3.8	19.2	41.9	32.1	7.5	22.2
SHRIMP	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1
STARFISH	103.7	154.7	40.1	41.3	97.5	78.3	224.1	76.7	2.8	10.5	3.3
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	4.4	10.7	1.0	0.6	1.0	1.0	14.3	35.4	74.0	50.1	13.7
TOTAL INVERTS	122.4	173.7	42.7	47.4	109.3	93.7	282.3	171.9	221.8	117.7	48.7
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1839.4	1166.7	586.6	766.9	721.2	1813.1	1361.3	875.8	2513.8	967.1	642.5

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	45	46	47	48	49	50	51	52	53	54	55
MONTH/DAY/YEAR	6/19/84	6/19/84	6/20/84	6/20/84	6/20/84	6/20/84	6/21/84	6/21/84	6/21/84	6/21/84	6/21/84
LATITUDE START	56 40.8	56 20.7	56 0.6	55 40.6	55 20.6	55 0.9	54 59.1	55 19.4	55 39.3	55 59.5	56 19.5
LONGITUDE START	164 36.1	164 35.4	164 35.2	164 35.4	164 35.3	164 32.0	165 46.1	165 47.6	165 47.9	165 46.2	165 47.4
LATITUDE END	56 39.4	56 19.2	55 59.2	55 39.1	55 19.2	55 1.0	54 58.6	55 20.8	55 40.6	56 0.8	56 20.8
LONGITUDE END	164 35.7	164 35.5	164 35.2	164 35.6	164 35.1	164 34.5	165 48.6	165 47.9	165 49.4	165 47.5	165 48.8
LORAN START	34120.00	34211.30	34292.70	34364.10	34425.50	34469.80	18313.10	18397.70	18477.10	34501.90	34431.70
LORAN START	47919.30	47912.20	47902.90	47890.70	47873.10	47832.40	48274.90	48317.40	48348.80	48362.40	48387.30
LORAN END	34125.70	34218.20	34298.30	34369.90	34429.10	34476.10	18308.40	18403.40	18481.20	34501.20	34431.00
LORAN END	47916.40	47912.80	47902.20	47891.30	47870.30	47847.90	48288.90	48321.30	48359.40	48372.00	48397.30
GEAR DEPTH	43	49	53	54	57	33	73	68	65	61	52
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.47	1.49	1.48	1.56	1.49	1.48	1.45	1.44	1.48	1.50	1.49
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	155.1	92.1	620.5	1646.5	1.4	13.2	596.5	142.0	4603.9	355.2	2154.6
PAC COD	61.2	29.0	13.6	9.7	15.0	84.4	15.0	42.6	38.0	37.2	156.8
PAC OC PERCH	C.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	C.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	2.3	0.0	11.8	2.7	0.0	0.0	0.0
PAC HERRING	C.0	0.0	C.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	0.7	6.6	9.5	0.0	4.5	2.9	0.5	0.0	0.0	5.4	0.0
EELPOUTS	0.5	0.1	0.7	0.0	0.2	0.0	1.6	0.1	0.0	0.0	0.0
OTHER RNDFISH	C.0	0.2	0.0	0.0	0.1	0.6	0.0	15.1	3.0	10.4	0.1
TOT ROUNDFISH	217.6	128.0	644.3	1656.2	23.4	101.1	625.3	202.6	4644.8	408.2	2311.5
YELLOW SOLE	498.9	210.0	309.8	195.8	91.2	74.8	3.2	0.0	0.0	0.4	65.8
RCCK SOLE	106.6	48.1	48.5	147.1	89.4	207.3	2.3	0.1	0.0	0.0	16.8
FLATHEAD SOLE	81.6	42.2	69.9	83.9	129.3	0.1	34.5	52.2	42.0	114.8	54.6
ALASKA PLAICE	340.2	75.7	11.3	0.0	5.4	197.5	2.7	0.0	0.0	0.0	28.0
GREENLAND TBT	C.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.9	435.4	357.0	0.2	57.6	87.5	34.0	102.5	2.8
PAC HALIBUT	C.0	6.2	1.6	84.1	122.5	60.4	C.0	27.7	18.1	0.0	2.2
OTHER FLTFISH	0.0	0.0	5.4	18.2	34.5	1.7	3.2	6.8	0.4	2.7	0.0
TOT FLATFISH	1027.4	382.2	448.0	964.5	829.2	542.1	103.4	174.3	94.4	229.4	170.2
SKATES	7.3	2.3	18.6	89.3	135.2	23.1	25.9	42.6	16.0	74.8	9.8
TOT ELASMOBR	7.3	2.3	18.6	89.3	135.2	23.1	25.9	42.6	16.0	74.8	9.8
RED KING CRAB	0.0	0.0	0.0	0.0	2.7	0.0	C.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	C.0	0.0	0.0	0.0	0.0	0.0	C.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	1.9	3.2	5.2	5.5	12.2	0.0	23.1	6.4	0.0	1.6	1.6
TANNER, OPILIO	2.8	5.4	1.4	2.0	2.3	0.0	3.2	2.3	0.0	1.4	2.5
TANNER, HYBRID	C.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	5.0	17.1	48.5	2.9	11.6	176.2	0.9	0.1	4.2	25.0	41.1
SNAILS	31.8	94.5	40.3	15.8	6.8	137.2	0.5	0.3	0.2	16.1	192.9
SHRIMP	C.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
STARFISH	15.1	4.5	0.0	0.0	0.0	82.6	0.2	0.0	0.0	0.0	18.2
SQUID	C.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	17.7	0.0	0.0	0.0	0.0
OTHER INVERTS	10.0	26.9	26.4	7.3	13.7	131.6	12.3	42.2	10.3	4.2	17.6
TOTAL INVERTS	66.6	151.7	121.7	33.5	49.3	527.7	58.0	51.2	14.7	48.3	274.0
OTHER	C.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1318.9	664.2	1232.6	2744.1	1037.1	1194.0	812.5	470.8	4769.9	751.7	2765.5

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	56	57	58	59	60	61	62	63	64	65	66
MONTH/DAY/YEAR	6/22/84	6/22/84	6/22/84	6/23/84	6/23/84	6/23/84	6/23/84	6/24/84	6/24/84	6/29/84	6/29/84
LATITUDE START	56 41.2	56 59.9	57 20.6	57 39.9	57 59.4	58 19.5	58 39.8	58 59.8	59 19.1	54 58.9	55 19.2
LONGITUDE START	165 51.3	165 50.4	165 52.3	165 51.9	165 54.0	165 56.3	165 57.3	165 55.1	165 57.5	166 56.7	166 58.7
LATITUDE END	56 42.7	56 58.6	57 19.2	57 41.4	58 0.6	58 21.1	58 40.8	59 0.7	59 20.6	55 0.3	55 20.5
LONGITUDE END	165 51.2	165 49.1	165 51.5	165 52.1	165 55.4	165 56.8	165 59.5	165 57.1	165 57.9	166 55.8	166 58.7
LORAN START	34348.20	34248.30	34129.50	33994.50	33851.30	33687.30	33505.00	33306.00	33115.10	18233.40	18332.60
LORAN START	48421.40	48413.50	48411.80	48384.30	48363.30	48331.60	48283.90	49212.20	48165.20	48678.30	48737.60
LORAN END	34340.80	34250.90	34136.40	33984.20	33845.10	33674.80	33500.60	33301.70	33100.90	18241.60	18338.70
LORAN END	48421.30	48404.70	48408.80	48383.70	48369.40	48330.80	48293.60	48220.60	48162.90	48676.50	48740.60
GEAR DEPTH	44	41	39	37	32	25	21	18	14	85	79
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.53	1.49	1.46	1.55	1.47	1.51	1.52	1.35	1.51	1.61	1.35
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	1229.0	9.5	73.0	34.9	91.2	29.0	5.4	0.0	1.4	481.0	966.4
PAC COD	28.8	21.3	27.7	68.9	35.6	11.3	68.0	62.1	169.2	18.6	37.0
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6	0.0
PAC HERRING	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	24.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	7.2	0.0	0.0	1.4	1.1	0.9	8.3	31.3	32.5	2.1	0.1
EELPOUTS	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.0
OTHER RNDFISH	0.1	0.1	0.1	0.2	0.6	0.2	1.8	0.2	5.9	1.2	29.1
TOT ROUNDFISH	1265.2	31.0	100.8	105.6	128.4	41.6	83.6	93.7	232.9	517.2	1034.6
YELLOW SOLE	153.9	137.8	427.7	515.7	659.2	187.8	312.1	178.0	207.3	0.0	0.0
ROCK SOLE	28.3	0.7	9.5	21.3	30.0	9.5	23.6	45.8	39.5	0.0	0.7
FLATHEAD SOLE	18.8	4.1	3.9	27.2	3.4	0.1	0.1	0.0	0.0	73.0	45.1
ALASKA PLAICE	12.7	91.2	94.3	401.9	191.2	4.5	35.8	69.9	63.0	0.0	0.0
GREENLAND TOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.4	47.4
PAC HALIBUT	0.0	0.0	0.0	0.0	0.0	15.6	11.4	9.1	19.4	0.0	7.9
OTHER FLTFISH	0.0	0.0	0.0	0.0	1.7	4.3	9.1	17.7	30.8	24.3	26.5
TOT FLATFISH	213.8	233.7	535.5	966.1	885.5	221.9	392.0	318.4	360.0	144.7	129.8
SKATES	17.2	0.0	5.2	7.3	33.3	9.1	20.0	0.0	0.0	7.1	28.1
TOT ELASMOBR	17.2	0.0	5.2	7.3	33.3	9.1	20.0	0.0	0.0	7.1	28.1
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	13.4	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	8.6	3.2
TANNER, OPILIO	3.4	25.5	112.0	46.7	8.8	0.1	0.0	0.0	0.0	0.9	2.3
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0
OTHER CRAB	3.5	8.6	6.8	72.4	187.0	20.0	5.5	5.3	2.4	0.9	0.5
SNAILS	45.5	14.6	24.6	71.7	147.0	18.1	4.7	0.3	0.1	3.1	1.6
SHRIMP	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.6	0.0
STARFISH	47.6	12.1	14.2	41.1	21.1	10.2	127.2	6.8	4.5	0.8	0.1
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	10.0	9.1	17.2	31.2	102.3	11.3	0.9	0.1	0.8	31.3	16.1
TOTAL INVERTS	123.6	70.4	175.1	263.2	546.4	59.8	138.5	12.6	7.8	47.2	23.6
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1619.7	385.1	816.5	1342.1	1593.7	332.3	634.1	424.7	600.8	716.3	1216.1

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	67	68	69	70	71	72	73	74	75	76	77
MONTH/DAY/YEAR	6/29/84	6/29/84	6/30/84	6/30/84	6/30/84	6/30/84	6/30/84	7/ 1/84	7/ 1/84	7/ 1/84	7/ 1/84
LATITUDE START	55 39.4	55 59.5	56 19.6	56 39.4	56 59.4	57 19.1	57 39.3	57 59.3	58 19.4	58 39.1	58 59.2
LONGITUDE START	166 59.3	167 0.5	167 1.5	167 4.0	167 5.4	167 7.2	167 8.4	167 9.8	167 10.9	167 12.5	167 14.3
LATITUDE END	55 40.9	56 1.1	56 21.1	56 40.7	57 0.9	57 20.6	57 40.7	58 0.7	58 20.9	58 40.6	59 0.7
LONGITUDE END	166 59.5	167 0.9	167 1.3	167 4.7	167 5.4	167 7.8	167 9.1	167 10.5	167 10.6	167 12.7	167 14.1
LORAN START	18428.60	18517.40	34660.10	34591.10	34497.60	34384.10	34241.90	34079.20	33895.80	33703.30	33494.60
LORAN START	48785.90	48831.80	48869.20	48903.70	48915.80	48913.20	48887.00	48845.40	48787.40	48726.40	48654.40
LORAN END	18435.30	18524.10	34654.10	34587.60	34489.80	34376.50	34233.00	34068.30	33880.40	33687.10	33477.80
LORAN END	48790.00	48837.00	48869.10	48909.30	48915.80	48915.50	48888.50	48845.30	48780.50	48719.20	48646.80
GEAR DEPTH	75	75	64	54	42	40	38	36	30	25	23
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.47	1.44	1.44	1.44	1.43	1.47	1.45	1.51	1.56	1.53	1.53
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	708.2	369.7	236.8	896.0	74.4	200.6	70.3	15.9	20.4	45.0	14.4
PAC COD	28.6	22.7	98.0	74.3	32.0	30.2	42.2	47.2	82.9	77.1	99.8
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	0.1	3.8	67.0	0.9	1.4	12.0	3.2	3.2	22.5	6.6	10.4
EELPOUTS	3.9	3.6	2.8	2.9	1.1	0.5	1.1	0.3	0.0	0.4	0.0
OTHER RNDFISH	59.6	39.0	15.3	0.1	0.3	0.0	0.3	0.1	3.1	2.2	2.1
TOT ROUNDFISH	798.4	438.8	419.9	974.2	109.2	243.2	117.1	66.7	128.8	132.3	126.8
YELLOW SOLE	0.0	0.0	0.0	107.6	187.3	441.2	387.1	356.3	1816.4	729.4	407.0
ROCK SOLE	0.0	0.0	0.5	29.1	55.1	146.5	2.3	3.2	14.3	40.8	17.4
FLATHEAD SOLE	44.5	46.5	33.6	40.7	8.4	5.3	5.9	4.5	2.8	2.3	0.2
ALASKA PLAICE	0.0	0.0	2.7	20.8	59.2	173.5	127.2	297.6	89.2	96.6	59.4
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	43.5	26.3	32.7	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	3.4	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.0
OTHER FLTFISH	13.2	10.7	5.9	2.5	0.1	0.0	0.0	3.2	1.5	0.7	1.0
TOT FLATFISH	104.7	85.6	75.3	206.4	310.2	766.5	522.5	664.7	1924.9	869.8	485.1
SKATES	8.2	5.1	28.0	27.4	0.2	0.0	2.0	3.6	0.0	4.5	17.4
TOT ELASMOBRH	8.2	5.1	28.0	27.4	0.2	0.0	2.0	3.6	0.0	4.5	17.4
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	2.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	4.3	2.9	4.5	0.1	1.0	0.1	0.9	0.0	0.0	0.0	0.0
TANNER, OPILIO	0.5	1.4	1.8	3.6	8.2	27.5	108.6	51.5	3.2	0.1	0.0
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	0.0	0.1	30.8	97.4	22.0	19.7	19.7	57.6	58.0	31.4	5.6
SNAILS	0.7	1.6	11.5	99.5	13.6	23.8	45.0	151.5	83.8	22.8	21.7
SHRIMP	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
STARFISH	0.2	0.5	431.1	29.6	25.1	25.4	67.1	21.0	96.2	220.7	243.2
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	18.6	9.6	19.7	31.0	17.3	44.8	191.0	111.5	229.9	14.2	3.4
TOTAL INVERTS	24.2	16.1	499.7	261.2	87.1	141.9	432.3	393.1	471.0	295.4	276.0
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	935.5	545.6	1022.8	1469.3	506.7	1151.6	1074.1	1128.1	2524.6	1301.9	906.3

Table A-1.--Station and catch data for the NOAA ship ~~Chapman~~ (cont'd).

HAUL #	78	79	80	81	82	83	84	85	86	87	88
MONTH/DAY/YEAR	7/ 1/84	7/ 2/84	7/ 2/84	7/ 2/84	7/ 2/84	7/ 2/84	7/ 3/84	7/ 3/84	7/ 3/84	7/ 3/84	7/ 3/84
LATITUDE START	59 19.2	60 19.6	59 59.6	59 40.3	59 20.7	59 0.7	58 40.4	58 20.7	58 0.5	57 50.2	57 41.1
LONGITUDE START	167 16.6	168 40.1	168 39.3	168 37.3	168 34.5	168 32.5	168 30.3	168 27.2	168 25.0	168 39.9	168 22.7
LATITUDE END	59 20.7	60 19.5	59 58.1	59 39.3	59 19.2	58 59.3	58 39.0	58 19.4	57 59.2	57 49.0	57 40.2
LONGITUDE END	167 17.4	168 43.4	168 38.8	168 37.1	168 34.1	168 32.2	168 29.5	168 28.2	168 26.2	168 41.4	168 24.8
LORAN START	33230.00	32704.50	32945.90	33169.90	33404.40	33636.70	33867.70	34081.30	34299.90	34436.20	34469.70
LORAN START	49583.30	48677.70	48770.90	48855.40	48945.20	49039.20	49133.30	49216.00	49297.10	49428.90	49358.80
LORAN END	33265.00	32710.50	32963.30	33186.50	33421.20	33653.40	33892.30	34098.70	34306.20	34452.40	34484.60
LORAN END	48581.40	48590.90	48776.20	48862.20	48951.00	49045.50	49136.60	49228.00	49309.60	49442.60	49375.20
GEAR DEPTH	19	21	22	23	25	26	30	37	40	40	40
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.53	1.52	1.55	1.53	1.50	1.51	1.50	1.51	1.46	1.48	1.49
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	14.1	53.8	71.0	27.8	42.6	35.6	51.6	5.9	76.9	7.0	27.2
PAC COD	104.1	100.7	127.2	68.7	78.3	74.8	51.1	7.9	52.2	2.9	13.6
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.2	0.2	0.2	0.1	10.6	0.5	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	25.1	26.5	32.4	13.5	15.5	5.7	1.5	4.3	12.0	1.1	4.2
EELPOUTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.0
OTHER RNDFISH	30.7	0.7	1.0	0.3	0.5	2.3	0.4	0.1	0.1	0.3	0.3
TOT ROUNDFISH	174.2	181.9	239.8	110.4	147.5	119.0	104.5	18.5	141.2	11.9	45.3
YELLOW SOLE	498.9	263.3	335.0	327.0	400.0	378.3	752.4	222.0	613.7	323.6	270.1
ROCK SOLE	17.0	5.0	13.8	38.8	76.7	27.2	17.5	0.5	4.3	12.7	52.6
FLATHEAD SOLE	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.6	5.2	8.6	14.1
ALASKA PLAICE	33.8	84.6	123.4	119.3	310.4	200.0	120.7	38.8	54.9	60.3	52.2
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
PAC HALIBUT	26.1	0.0	1.3	1.3	2.5	0.0	0.0	2.0	0.0	1.4	5.0
OTHER FLTFISH	1.2	5.3	3.2	4.4	4.9	2.6	4.0	2.9	0.0	0.0	0.0
TOT FLATFISH	577.0	358.2	476.6	490.8	794.5	608.2	895.0	267.8	678.1	406.7	394.1
SKATES	18.1	0.0	0.0	0.0	17.5	0.0	7.3	11.3	0.0	0.7	5.4
TOT ELASMOBRH	18.1	0.0	0.0	0.0	17.5	0.0	7.3	11.3	0.0	0.7	5.4
RED KING CRAB	0.0	0.7	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	2.3
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.4	4.5
TANNER, BAIRDI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
TANNER, OPILIO	0.0	0.2	0.0	0.0	0.3	0.3	5.3	24.4	40.5	46.6	14.2
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.4	1.0	0.7	1.4
OTHER CRAB	1.1	13.9	20.5	10.9	23.3	14.6	55.2	26.0	28.2	25.4	27.6
SNAILS	2.2	5.8	11.4	11.1	28.1	34.4	46.8	28.0	12.1	15.4	171.6
SHRIMP	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0
STARFISH	98.9	33.1	142.4	115.2	72.6	117.6	98.0	22.9	14.2	19.8	151.1
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	2.9	11.9	7.4	5.3	10.2	9.7	47.7	16.1	51.7	101.4	223.5
TOTAL INVERTS	105.1	65.6	181.7	142.6	134.5	178.2	253.2	118.8	147.7	218.7	606.9
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	874.5	605.7	898.2	743.8	1094.1	905.3	1260.1	416.3	966.9	638.0	1051.7

able A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

AUL #	89	90	91	92	93	94	95	96	97	98	99
ONTH/DAY/YEAR	7/ 4/84	7/ 4/84	7/ 4/84	7/ 4/84	7/ 4/84	7/ 5/84	7/ 5/84	7/ 6/84	7/ 6/84	7/ 7/84	7/ 7/84
ATITUDE START	57 30.1	57 20.2	57 10.7	57 0.6	56 50.1	56 40.0	56 20.1	56 38.5	56 22.0	56 49.0	56 59.1
ONGITUDE START	168 38.0	168 21.5	168 36.9	168 18.9	168 36.0	168 17.4	168 14.4	169 27.7	169 28.1	169 52.5	169 34.7
ATITUDE END	57 29.7	57 19.4	57 9.5	56 59.7	56 49.0	56 39.0	56 19.1	56 38.6	56 21.9	56 49.1	57 0.1
ONGITUDE END	168 40.6	168 23.9	168 38.5	168 21.1	168 37.9	168 19.3	168 16.2	169 30.4	169 30.7	169 55.2	169 32.8
ORAN START	34616.60	34635.50	34755.20	34748.00	34857.50	34832.40	18566.30	18605.80	18497.70	18642.20	18713.80
CRAN START	49491.00	49406.40	49522.20	49407.30	49516.40	49383.50	49328.00	49809.00	49748.80	49980.90	49907.00
ORAN END	34626.90	34649.50	34768.40	34760.80	34868.30	34842.40	18559.90	18603.20	18492.50	18638.50	18718.10
ORAN END	49508.60	49423.20	49534.10	49422.40	49527.10	49394.50	49336.00	49824.10	49761.40	49994.90	49896.40
EAR DEPTH	40	42	44	45	55	60	87	40	75	42	35
URATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
ISTANCE FISHED	1.47	1.53	1.52	1.55	1.50	1.49	1.46	1.49	1.49	1.52	1.44
ERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	1 / 37	0 / 37	0 / 37
OLLOCK	65.7	36.3	23.1	450.6	990.9	1316.8	1227.3	189.8	0.0	174.0	13.6
AC COD	19.5	29.0	45.4	24.7	32.9	124.2	61.9	77.7	160.1	88.9	97.7
AC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
THER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	94.6	0.0	0.0
ABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	29.6	0.0	0.0	0.0	0.0
AC HERRING	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CULPINS	40.9	8.6	29.5	11.8	10.2	32.1	36.2	493.5	16.1	79.7	141.3
ELPOUTS	0.0	0.0	0.0	0.0	1.1	0.7	1.4	0.0	0.0	0.0	0.0
THER RNDFISH	0.8	0.2	0.2	0.2	0.2	0.2	4.5	2.2	85.0	0.6	6.3
OT ROUNDFISH	127.0	74.1	98.3	487.4	1035.3	1474.0	1360.9	763.4	355.9	342.1	248.9
YELLOW SOLE	277.8	211.4	221.1	86.2	24.0	2.6	0.0	9.5	0.0	51.5	132.7
ROCK SOLE	110.9	113.6	117.3	171.0	15.4	7.5	13.2	197.9	22.2	109.1	406.1
FLATHEAD SOLE	8.9	15.0	14.7	7.9	19.7	30.6	133.9	3.0	7.9	4.1	3.2
ALASKA PLAICE	40.0	14.5	5.9	11.3	7.3	1.9	0.0	0.0	0.0	0.0	20.3
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0
ARROWTOOTH FL	1.1	6.8	22.7	1.0	23.1	41.8	227.2	12.5	53.0	29.3	5.6
PAC HALIBUT	0.8	5.7	0.0	0.0	1.3	0.0	13.8	3.7	5.4	19.7	7.4
OTHER FLTFISH	0.0	0.0	0.0	0.2	0.1	0.7	2.7	0.0	0.5	0.7	0.0
OT FLATFISH	439.6	367.0	381.7	277.6	91.5	85.2	390.9	226.6	99.1	214.3	575.4
SKATES	4.4	15.9	9.1	0.1	0.0	34.7	11.8	14.0	10.9	28.1	4.9
OT ELASMOBR	4.4	15.9	9.1	0.1	0.0	34.7	11.8	14.0	10.9	28.1	4.8
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8
BLUE KING CRAB	3.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.9	49.1
TANNER, BAIRDI	0.6	3.3	0.5	1.9	0.1	0.8	45.6	0.1	0.7	7.7	16.1
TANNER, OPILIO	8.9	10.8	13.2	23.3	26.5	24.1	64.5	0.0	0.0	0.7	44.3
TANNER, HYBRID	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	21.1	18.9	5.5	5.8	10.6	10.9	2.3	19.6	9.3	20.2	51.3
SNAILS	2.7	3.9	1.6	24.2	19.2	7.5	0.8	2.9	5.8	1.3	76.4
SHRIMP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
STARFISH	143.9	5.4	12.2	17.7	3.7	0.0	0.0	27.5	12.3	2.8	23.5
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	714.5	407.5	22.9	26.8	2.1	4.1	0.3	254.6	34.9	7.6	404.7
TOTAL INVERTS	895.6	450.0	56.0	99.7	62.2	47.5	113.5	304.7	63.0	75.4	667.2
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1465.7	906.9	545.1	864.8	1189.0	1641.3	1977.1	1308.7	528.9	659.9	1496.3

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	100	101	102	103	104	105	106	107	108	109	110
MONTH/DAY/YEAR	7/ 7/84	7/ 7/84	7/ 7/84	7/ 8/84	7/ 8/84	7/ 8/84	7/ 8/84	7/ 8/84	7/ 9/84	7/ 9/84	7/ 9/84
LATITUDE START	57 9.0	57 19.7	57 30.1	57 39.7	57 49.5	57 59.9	58 20.1	58 40.1	59 0.1	59 19.7	59 39.6
LONGITUDE START	169 53.8	169 37.1	169 58.3	169 38.3	170 0.3	169 41.2	169 42.8	169 46.6	169 49.9	169 53.3	169 55.4
LATITUDE END	57 10.4	57 20.8	57 30.6	57 40.4	57 49.3	57 59.8	58 20.5	58 40.3	58 59.7	59 20.6	59 40.6
LONGITUDE END	169 53.0	169 35.2	170 0.8	169 40.6	170 3.5	169 44.0	169 45.4	169 49.4	169 52.6	169 55.6	169 57.7
LORAN START	18747.10	34910.70	34859.70	34706.20	18622.00	34475.50	18548.60	33996.00	33754.90	18312.80	18242.40
LORAN START	50038.50	49901.70	49965.30	49808.40	49847.50	49698.70	49579.50	49470.90	49362.70	49260.30	49155.00
LORAN END	18749.20	34893.90	34858.00	34702.90	18616.10	34482.00	18541.10	33996.70	33762.00	18304.30	18233.40
LORAN END	50031.50	49885.60	49973.20	49815.40	49859.30	49712.00	49587.50	49480.10	49374.50	49263.20	49157.50
GEAR DEPTH	27	36	39	40	41	40	39	38	35	35	32
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.53	1.52	1.45	1.45	1.42	1.52	1.50	1.49	1.51	1.50	1.52
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	0.0	29.4	20.9	11.3	23.1	8.2	29.5	98.0	108.5	243.5	19.2
PAC COD	77.1	35.3	29.5	6.0	83.0	20.4	51.9	137.2	129.0	419.3	125.4
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.3	0.3	1.1
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	13.5	70.1	60.0	90.0	36.7	55.8	19.1	6.0	11.1	3.9	74.7
EELPOUTS	0.0	0.0	0.0	0.0	0.1	0.0	6.4	14.3	14.8	4.7	46.4
OTHER RNDFISH	0.4	0.5	0.2	5.8	0.0	0.4	0.5	0.1	0.3	1.0	1.1
OT ROUNDFISH	90.9	135.3	110.6	113.2	143.0	84.8	107.5	256.2	264.0	672.7	268.0
YELLOW SOLE	5.5	756.2	180.3	477.6	320.9	319.3	692.4	499.2	702.6	544.5	315.4
ROCK SOLE	485.5	305.2	119.7	13.3	46.5	5.7	2.9	5.4	5.8	6.8	1.3
FLATHEAD SOLE	0.0	4.6	7.0	2.0	4.1	2.7	3.2	10.0	3.3	1.3	0.0
ALASKA PLAICE	0.0	132.0	83.7	303.5	368.3	176.4	258.3	74.8	465.5	419.3	442.9
GREENLAND TBT	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.1	6.3	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	64.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	5.4	0.0	0.0
OTHER FLTFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	5.1	1.1
OT FLATFISH	555.1	1204.8	391.7	796.4	741.9	504.2	956.8	589.4	1192.4	977.0	751.7
SKATES	0.0	0.0	8.2	1.7	19.5	2.9	8.2	18.1	2.9	0.0	0.0
OT ELASMOBRA	0.0	0.0	8.2	1.7	19.5	2.9	8.2	18.1	2.9	0.0	0.0
RED KING CRAB	7.0	1.5	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	26.3	23.6	7.6	1.1	11.3	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	2.2	7.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, OPILIO	0.2	28.7	99.3	168.1	94.3	71.7	54.4	57.8	15.6	21.5	39.8
TANNER, HYBRID	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	30.3	53.7	48.2	71.8	98.3	128.0	12.1	40.0	90.7	51.0	47.7
SNAILS	0.6	0.1	1.9	0.0	13.2	72.3	22.3	14.7	61.2	73.2	103.4
SHRIMP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
ARFISH	186.4	369.3	51.9	63.4	91.2	88.4	14.4	21.0	18.9	3.5	51.2
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	11.9	1340.3	509.0	21.9	16.7	15.8	5.8	8.5	67.6	63.0	87.9
TAL INVERTS	262.8	1819.4	732.4	326.4	325.5	376.2	109.0	140.1	254.1	212.3	329.5
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	908.9	3159.6	1242.8	1237.7	1229.9	968.2	1181.5	1003.9	1713.3	1862.1	1359.2

Table A-1--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	111	112	113	114	115	116	117	118	119	120	121
MONTH/DAY/YEAR	7/ 9/84	7/ 9/84	7/10/84	7/10/84	7/10/84	7/11/84	7/11/84	7/11/84	7/12/84	7/12/84	7/12/84
LATITUDE START	59 59.2	60 19.7	60 39.1	60 39.7	60 39.5	60 59.1	60 59.9	61 0.8	60 19.4	60 0.5	59 40.6
LONGITUDE START	169 57.3	170 0.6	171 24.6	172 6.3	172 42.4	172 48.8	172 10.1	171 26.4	171 22.1	171 17.1	171 15.3
LATITUDE END	60 0.2	60 21.2	60 40.5	60 41.0	60 40.9	61 0.5	60 58.4	60 59.5	60 20.8	59 59.1	59 39.1
LONGITUDE END	169 59.2	170 0.4	171 24.9	172 7.6	172 43.4	172 48.6	172 10.4	171 27.6	171 21.6	171 16.3	171 15.1
LORAN START	18176.20	18106.40	17821.70	17689.90	17569.30	17511.70	17634.90	17764.50	17878.60	17944.20	18005.00
LORAN START	49054.70	48958.40	49093.50	49186.80	49261.70	49178.90	32404.20	32365.50	32853.20	33076.00	33313.70
LORAN END	18168.30	18102.60	17817.40	17682.70	17563.20	17510.10	17637.30	17764.00	17876.70	17950.40	18009.50
LORAN END	49055.70	48950.00	49087.10	49183.00	49256.80	49171.60	32421.80	32381.50	32836.50	33092.70	33331.20
GEAR DEPTH	31	30	36	35	27	38	36	36	33	40	41
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.40	1.45	1.45	1.47	1.50	1.53	1.51	1.45	1.44	1.49	1.52
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	0.0	0.1	0.1	0.1	2.3	0.0	0.0	0.3	0.1	0.1	0.1
PAC COD	26.5	2.7	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.1	2.8
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.3	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.7
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	55.9	36.3	18.5	20.0	566.4	35.0	10.5	7.9	34.9	35.2	13.6
EELPOUTS	64.8	3.1	5.0	3.2	0.3	2.5	0.9	1.6	28.1	21.3	20.2
OTHER RNDFISH	1.5	1.7	0.3	0.3	0.3	0.8	0.4	1.5	1.4	3.3	3.9
TOT ROUNDFISH	149.0	43.9	24.1	28.6	569.3	38.3	11.9	11.4	64.6	60.1	41.3
YELLOW SOLE	586.1	74.8	2.7	1.5	1.4	0.0	0.2	2.3	26.8	57.2	30.4
ROCK SOLE	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.4
FLATHEAD SOLE	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.9
ALASKA PLAICE	2954.2	179.6	20.2	5.0	496.0	4.8	11.1	12.5	30.8	30.4	188.1
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER FLTFISH	7.3	1.6	0.9	0.5	31.4	1.8	0.7	1.3	1.5	3.5	4.4
TOT FLATFISH	3547.7	256.2	23.9	6.9	528.9	6.8	12.0	16.0	59.2	91.1	274.2
SKATES	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	3.4	0.0
TOT ELASMOBRH	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	3.4	0.0
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, OPILIO	27.9	33.6	124.7	89.4	4.2	252.5	171.0	81.4	53.3	220.1	113.2
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	105.4	56.8	0.8	1.1	7.5	1.0	2.0	2.6	4.0	17.2	3.1
SNAILS	159.8	116.3	0.4	0.6	6.2	0.2	0.6	1.9	43.0	31.8	19.3
SHRIMP	0.0	0.0	0.2	0.2	0.0	0.1	0.2	0.3	0.2	0.0	0.1
STARFISH	64.8	59.9	25.4	57.6	17.5	7.7	70.9	24.9	21.5	25.3	32.0
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	116.0	22.2	2.5	2.1	6.5	1.3	5.3	3.6	5.5	6.2	6.7
TOTAL INVERTS	474.0	288.7	154.1	151.1	42.7	262.8	250.0	114.8	127.5	309.6	174.4
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	4170.7	588.7	202.1	186.6	1145.4	307.9	274.0	142.2	251.2	455.3	490.0

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	122	123	124	125	126	127	128	129	130	131	132
MONTH/DAY/YEAR	7/12/84	7/12/84	7/13/84	7/13/84	7/13/84	7/13/84	7/13/84	7/14/84	7/14/84	7/14/84	7/15/84
LATITUDE START	59 20.5	59 1.0	58 40.4	58 20.7	58 0.7	57 40.6	57 20.7	56 59.6	56 40.6	56 20.8	56 0.1
LONGITUDE START	171 11.5	171 8.2	171 5.2	171 1.0	170 58.2	170 54.4	170 52.2	170 46.2	170 44.2	170 41.5	168 13.1
LATITUDE END	59 19.0	58 59.5	58 38.9	58 19.2	57 59.2	57 39.1	57 19.4	56 58.1	56 39.2	56 19.2	55 58.6
LONGITUDE END	171 11.7	171 8.2	171 4.9	171 0.4	170 58.0	170 54.3	170 52.1	170 46.6	170 43.5	170 41.5	168 13.3
LORAN START	18075.20	18145.60	18220.40	18299.80	18375.90	18455.40	18510.70	18511.10	18402.00	18269.60	18463.70
LORAN START	49435.30	33786.10	34031.30	34266.80	34503.40	34737.30	34947.10	35094.70	35127.20	50015.60	49268.60
LORAN END	18078.90	18150.10	18226.30	18307.40	18381.70	18460.60	18511.90	18501.20	18395.50	18258.00	18455.50
LORAN END	49494.10	33803.20	34049.60	34285.00	34521.00	34754.10	34959.40	35097.90	35128.70	50009.00	49265.90
GEAR DEPTH	43	44	47	48	49	48	47	54	54	68	84
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.47	1.51	1.57	1.58	1.50	1.52	1.46	1.50	1.44	1.51	1.47
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	3.2	5.2	61.5	1074.6	337.0	12.2	15.4	28.6	109.3	0.0	502.8
PAC COD	12.2	24.5	148.1	55.8	87.3	38.3	65.5	47.4	43.8	155.6	126.3
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
PAC HERRING	0.8	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	28.6	21.4	18.6	11.5	18.4	41.5	148.0	22.0	26.2	14.4	2.4
EELPOUTS	21.1	19.1	8.6	0.0	0.2	0.1	0.2	0.1	1.6	0.1	0.6
OTHER RNDFISH	0.7	0.9	0.2	0.0	0.1	0.1	1.7	22.7	7.8	1.0	0.1
TOT ROUNDFISH	66.6	71.2	237.0	1142.2	443.4	92.3	230.9	120.8	188.7	171.1	634.6
YELLOW SOLE	107.5	66.0	101.6	97.4	312.5	285.1	20.9	0.5	0.0	0.0	0.0
ROCK SOLE	0.2	0.2	0.7	22.0	33.8	21.3	81.0	11.1	3.4	0.0	26.3
FLATHEAD SOLE	1.1	0.8	1.2	1.3	37.2	44.5	18.1	44.9	60.1	59.6	65.5
ALASKA PLAICE	124.7	92.5	64.2	167.4	29.0	40.1	15.0	6.8	0.6	0.0	0.0
GREENLAND TBT	0.0	0.0	3.6	3.2	3.6	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	17.9	20.0	15.6	14.1	39.5	78.9	34.1
PAC HALIBUT	0.0	0.0	10.6	8.4	2.2	8.8	7.1	0.0	8.2	74.4	1.5
OTHER FLTFISH	6.1	0.8	4.1	3.2	0.0	0.0	0.7	0.8	4.3	9.1	0.7
TOT FLATFISH	239.7	160.3	186.0	303.4	436.3	419.8	158.4	78.2	116.0	222.0	178.2
SKATES	0.0	0.0	8.6	8.7	36.5	29.9	51.9	34.5	63.1	37.8	136.5
TOT ELASMOBRH	0.0	0.0	8.6	8.7	36.5	29.9	51.9	34.5	63.1	37.8	136.5
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	5.4	0.0	9.3	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	2.0	0.9	1.9	2.7	6.1	8.0	1.5
TANNER, OPILIO	74.2	218.9	101.8	17.7	37.4	45.4	154.6	28.1	14.1	0.2	2.0
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.1	0.9
OTHER CRAB	3.8	5.9	4.0	14.4	31.6	39.2	4.3	8.6	17.2	11.2	7.6
SNAILS	61.9	121.4	25.8	20.8	37.2	489.7	301.4	48.0	12.2	11.7	1.2
SHRIMP	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.1
STARFISH	22.2	28.0	25.1	225.5	17.9	14.1	82.0	3.6	72.6	427.2	4.7
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
OTHER INVERTS	17.8	6.9	0.7	9.8	5.9	7.6	112.8	9.4	3.9	16.2	73.1
TOTAL INVERTS	179.9	381.2	157.4	293.7	132.1	606.1	656.9	100.8	127.5	474.6	41.1
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	486.3	612.6	589.0	1748.0	1048.3	1148.1	1098.1	334.2	495.4	905.5	990.5

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	133	134	135	136	137	138	139	140	141	142	143
MONTH/DAY/YEAR	7/15/84	7/21/84	7/21/84	7/21/84	7/21/84	7/21/84	7/22/84	7/22/84	7/22/84	7/22/84	7/22/84
LATITUDE START	55 40.6	56 39.8	56 59.5	57 20.0	57 39.6	57 59.2	58 20.3	58 39.7	58 59.4	59 19.9	59 39.4
LONGITUDE START	168 11.1	171 59.1	172 1.6	172 6.5	172 10.3	172 12.4	172 16.4	172 22.5	172 27.9	172 30.2	172 48.0
LATITUDE END	55 39.1	56 40.0	57 0.3	57 20.8	57 40.3	57 59.6	58 20.2	58 41.2	59 1.0	59 20.4	59 30.9
LONGITUDE END	168 10.3	171 56.5	172 2.8	172 4.4	172 12.3	172 15.1	172 20.4	172 22.9	172 28.5	172 30.2	172 47.5
LORAN START	18357.30	17961.60	18024.70	18039.50	18026.20	18001.50	17950.60	17885.90	33778.30	17774.50	17679.10
LORAN START	49200.30	34992.00	50183.30	34773.90	34611.70	50030.00	34209.50	33997.10	49749.70	49651.10	33436.90
LORAN END	18350.20	17979.40	18019.60	18053.80	18011.40	17985.60	17930.00	17881.20	33760.00	17771.60	17678.50
LORAN END	49191.60	34997.20	50183.20	34773.40	34600.70	50030.10	34204.70	33980.20	49742.10	49643.60	33421.00
YEAR DEPTH	76	71	66	61	61	59	58	57	56	50	53
DURATION IN HOURS	0.50	0.50	0.33	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.53	1.49	1.01	1.51	1.54	1.57	2.02	1.52	1.60	1.50	1.49
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	466.6	4401.6	1899.4	537.5	40.3	143.1	239.0	790.2	1236.9	231.3	5710.0
PAC COD	220.8	379.9	278.6	2.7	73.0	56.5	294.8	212.7	174.2	228.2	339.7
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	91.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.9	7.3	0.0	0.2	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	11.1	8.3	14.8	17.7	21.0	8.8	7.9	8.5	9.3	27.5	36.2
EELPOUTS	0.1	0.0	0.2	0.0	0.1	0.2	1.1	2.0	0.1	149.7	130.2
OTHER RNDFISH	3.4	0.0	0.1	0.2	0.5	0.4	0.2	0.2	0.1	0.3	0.0
TOT ROUNDFISH	793.8	4792.0	2193.1	559.1	142.5	209.0	543.4	1013.6	1420.6	637.0	6216.1
YELLOW SOLE	0.0	0.0	0.0	0.7	2.5	4.1	5.9	22.7	21.8	211.8	110.4
ROCK SOLE	11.0	1.0	6.2	2.7	6.4	15.0	4.5	17.2	2.3	19.1	48.3
FLATHEAD SOLE	63.5	8.1	46.2	12.7	31.3	17.7	8.6	6.8	20.0	45.8	143.2
ALASKA PLAICE	0.0	0.0	0.0	10.0	9.5	39.5	8.2	41.7	8.2	93.2	2.6
GREENLAND TBT	0.0	0.0	0.0	0.0	1.4	6.8	8.4	8.6	1.4	8.2	0.0
ARROWTOOTH FL	70.4	32.4	44.4	6.1	24.0	29.5	13.2	10.0	0.9	0.0	0.0
PAC HALIBUT	11.7	38.0	5.1	4.2	2.8	2.5	15.2	2.4	1.9	0.0	2.4
OTHER FLTFISH	3.0	24.3	7.4	0.7	0.0	0.5	0.0	0.0	0.0	0.0	0.0
TOT FLATFISH	159.6	103.8	109.2	37.1	77.9	115.5	64.0	109.5	56.2	377.2	306.8
SKATES	75.4	0.0	99.8	0.0	86.2	56.7	26.3	3.6	2.3	9.5	0.0
TOT ELASMOBRH	75.4	0.0	99.8	0.0	86.2	56.7	26.3	3.6	2.3	9.5	0.0
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	3.0
TANNER, BAIRDI	1.8	9.5	19.5	17.9	1.2	0.1	3.9	4.7	0.1	0.1	0.0
TANNER, OPILIO	0.6	0.0	23.5	143.6	78.0	22.0	34.5	14.2	8.4	40.8	11.7
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	4.0	2.5	42.3	3.2	24.8	6.3	3.8	11.3	5.6	5.4	0.0
SNAILS	8.9	2.8	14.1	19.8	28.4	82.0	217.2	98.0	36.6	47.0	12.6
SHRIMP	0.0	0.0	0.3	0.0	0.1	0.2	0.4	0.2	0.2	0.0	0.0
STARFISH	904.3	335.7	92.4	3.6	15.0	61.0	24.9	25.5	17.7	59.5	7.1
SQUID	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	10.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	18.3	1.2	16.7	0.0	2.6	2.7	2.7	0.5	1.0	0.7	1.2
TOTAL INVERTS	937.9	362.4	208.7	188.1	150.5	174.3	287.4	154.5	70.9	153.9	35.7
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1966.7	5258.2	2610.9	784.3	457.1	555.9	921.1	1281.2	1550.0	1177.6	6558.6

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	144	145	146	147	148	149	150	151	152	153	154
MONTH/DAY/YEAR	7/23/84	7/23/84	7/23/84	7/23/84	7/24/84	7/24/84	7/24/84	7/24/84	7/25/84	7/25/84	7/25/84
LATITUDE START	59 39.9	59 49.6	59 58.9	60 10.2	60 20.0	60 9.8	60 0.4	59 50.1	59 40.0	59 29.5	59 0.4
LONGITUDE START	172 34.7	172 54.1	172 39.6	172 59.2	174 6.7	174 25.4	174 0.7	174 14.4	173 52.5	173 50.8	173 45.8
LATITUDE END	59 40.8	59 51.1	60 0.1	60 10.3	60 19.6	60 11.2	59 59.6	59 51.4	59 39.3	59 19.4	58 59.0
LONGITUDE END	172 32.3	172 54.3	172 38.5	172 56.2	174 8.0	174 24.2	173 58.6	174 12.7	173 51.9	173 50.7	173 45.6
LORAN START	17713.70	33212.30	17657.40	17561.60	32871.40	32973.10	33077.40	17278.40	17384.50	33494.90	33701.10
LORAN START	33323.70	49532.00	49460.60	49437.00	49492.30	49562.60	49574.90	33178.60	33293.30	49747.50	49832.70
LORAN END	17721.50	33195.70	17659.20	17572.90	32885.60	32958.90	33087.00	17284.50	17387.50	33505.70	33714.80
LORAN END	33314.50	49524.80	49451.80	49431.60	49500.40	49554.80	49576.20	33165.50	33300.80	49752.20	49838.50
GEAR DEPTH	48	46	37	33	52	57	55	60	59	62	66
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.25	0.33	0.50
DISTANCE FISHED	1.50	1.51	1.43	1.49	1.54	1.52	1.52	1.51	0.75	1.05	1.45
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	4.1	3.6	0.9	6.8	13.4	1496.2	375.6	8841.3	1329.2	748.2	2276.8
PAC COD	0.1	1.8	0.1	3.6	0.1	344.6	68.0	900.6	183.6	127.0	206.0
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	4.9	12.1	238.6	52.8	34.9	10.9	126.6	0.0	1.1	16.2	2.4
EELPOUTS	7.8	19.7	4.8	1.9	4.8	0.0	8.6	0.0	3.8	2.5	2.6
OTHER RNDFISH	1.1	6.8	0.7	1.3	8.1	0.0	0.0	0.0	0.2	0.0	0.6
TOT ROUNDFISH	18.1	44.0	245.1	66.4	61.3	1851.6	579.0	9741.8	1517.9	893.9	2488.4
YELLOW-SOLE	79.8	88.0	91.2	42.4	0.0	1.5	1.8	0.0	0.0	4.4	0.0
ROCK SOLE	0.7	0.5	0.9	0.2	0.1	10.4	0.9	13.2	2.0	27.2	1.5
FLATHEAD SOLE	13.6	15.0	3.2	0.0	5.0	45.5	54.9	13.2	0.5	12.2	0.0
ALASKA PLAICE	21.9	51.3	299.8	37.2	0.0	0.0	8.6	1.4	1.2	122.5	0.0
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.6	13.6	16.5
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
PAC HALIBUT	0.5	0.8	0.0	0.0	1.5	3.0	1.0	84.2	1.2	2.0	0.0
OTHER FLTFISH	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
TOT FLATFISH	116.4	155.7	395.1	79.8	6.6	60.4	67.2	114.4	5.5	182.1	17.9
SKATES	2.5	7.3	15.0	0.9	5.1	7.4	2.9	16.4	10.4	20.4	14.3
TOT ELASMOBRH	2.5	7.3	15.0	0.9	5.1	7.4	2.9	16.4	10.4	20.4	14.3
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	3.9	1.8	3.9	23.7	2.5	14.1	3.9	6.8	5.7	2.3	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	1.4
TANNER, OPILIO	30.5	22.1	90.3	1.1	121.3	25.2	20.9	30.1	14.6	97.9	38.3
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
OTHER CRAB	6.7	61.1	106.1	2.0	1.5	0.1	0.4	0.0	0.3	6.8	9.5
SNAILS	67.1	102.8	73.9	10.2	0.1	0.2	2.7	15.9	29.0	31.3	48.1
SHRIMP	0.0	0.1	0.0	0.5	0.0	0.2	0.1	0.0	0.1	0.2	0.7
STARFISH	36.1	14.3	9.0	18.6	0.0	20.3	2.0	13.1	5.6	8.8	8.6
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	5.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	0.9	0.9	21.1	70.3	0.0	14.8	4.6	0.0	2.2	1.5	2.7
TOTAL INVERTS	150.1	209.5	304.2	134.4	125.4	74.8	34.5	65.9	57.4	138.7	109.8
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	287.1	416.5	959.4	281.6	198.4	1994.3	683.6	9938.5	1591.3	1235.1	2630.5

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	155	156	157	158	159	160	189	190	191	192	193
MONTH/DAY/YEAR	7/25/84	7/25/84	7/26/84	7/26/84	7/26/84	7/26/84	8/10/84	8/10/84	8/10/84	8/11/84	8/11/84
LATITUDE START	58 40.4	58 20.6	58 0.4	57 44.6	57 20.7	57 0.6	58 20.1	58 39.2	58 59.1	59 19.2	59 39.2
LONGITUDE START	173 40.2	173 34.3	173 29.2	173 24.5	173 20.1	173 15.3	174 17.9	174 15.8	174 21.3	174 27.5	174 27.7
LATITUDE END	58 39.7	58 19.2	57 58.9	57 43.1	57 19.2	56 59.2	58 20.1	58 40.4	59 0.4	59 20.0	59 40.6
LONGITUDE END	173 40.1	173 33.9	173 28.8	173 23.7	173 20.1	173 14.8	174 19.8	174 17.3	174 23.1	174 27.4	174 27.6
LORAN START	33902.40	17531.40	17558.70	34417.90	34597.30			17303.80	17271.20	17236.70	17226.50
LORAN START	49914.20	34095.00	34281.00	50116.30	50168.10			49940.40	49866.10	49787.10	49701.30
LORAN END	33909.20	17533.80	17560.70	34430.60	34606.60			17295.90	17254.30	17237.10	17226.00
LORAN END	49917.00	34108.70	34293.80	50120.10	50170.40			49936.50	49861.50	49783.60	49694.80
GEAR DEPTH	71	65	66	81	68	81	97	87	72	58	65
DURATION IN HOURS	0.25	0.50	0.50	0.50	0.50	0.50	0.33	0.50	0.50	0.50	0.50
DISTANCE FISHED	0.75	1.50	1.47	1.51	1.50	1.49	0.99	1.49	1.50	1.47	1.48
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	141.5	87.1	391.4	308.7	201.8	391.2	76.7	845.0	2638.7	520.5	805.0
PAC COD	331.1	327.9	71.2	80.3	25.4	183.7	535.7	153.8	133.5	139.7	161.9
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	6.8	0.0	32.9	0.0	12.2	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	5.2	9.2	30.7	5.5	7.9	7.8	13.6	7.4	15.0	3.0	0.7
EELPOUTS	0.0	0.0	0.6	0.0	0.5	0.0	0.0	0.0	1.4	0.9	3.3
OTHER RNDFISH	0.8	0.0	0.3	2.4	0.2	0.1	1.4	2.7	0.3	0.4	0.8
TOT ROUNDFISH	478.6	423.2	494.3	403.7	235.7	615.7	627.4	1021.1	2788.9	664.8	972.9
YELLOW SOLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
ROCK SOLE	9.1	24.9	7.7	7.9	5.4	10.4	2.3	18.6	10.6	2.9	1.8
FLATHEAD SOLE	32.7	30.8	18.1	54.4	89.6	63.5	2.7	20.6	1.1	1.8	0.0
ALASKA PLAICE	3.6	1.6	1.4	0.0	0.0	0.0	0.0	0.0	8.5	7.3	0.5
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	4.5
ARROWTOOTH FL	10.9	28.1	15.9	192.3	19.1	103.0	27.7	125.6	7.8	10.2	2.3
PAC HALIBUT	0.0	5.1	11.2	16.5	2.5	7.3	2.8	5.2	0.0	0.0	1.0
OTHER FLTFISH	0.0	1.8	4.5	5.4	4.3	3.4	3.8	2.9	0.1	0.0	1.4
TOT FLATFISH	56.2	92.4	58.8	277.5	121.4	187.6	39.2	173.0	28.1	25.2	12.3
SKATES	63.5	44.5	96.8	59.4	38.5	0.0	1.1	34.2	12.0	41.3	20.4
TOT ELASMOBRN	63.5	44.5	96.8	59.4	38.5	0.0	1.1	34.2	12.0	41.3	20.4
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	5.7
TANNER, BAIRDI	21.5	32.7	68.0	30.8	95.7	3.6	0.5	8.4	0.0	0.0	0.0
TANNER, OPILIO	17.9	122.5	7.9	0.0	0.0	0.0	0.0	151.0	62.5	56.0	51.8
TANNER, HYBRID	0.8	1.4	9.8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	7.3	17.0	8.9	13.0	19.9	9.6	7.3	5.2	10.6	9.8	1.6
SNAILS	20.7	11.2	9.4	5.1	4.9	1.8	1.7	6.1	67.2	53.9	33.3
SHRIMP	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.2	0.0	0.4	0.5
STARFISH	4.3	2.8	1.7	2.3	0.5	0.1	4.4	0.8	3.9	3.9	32.5
SQUID	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.7	0.0
OTHER INVERTS	0.8	0.7	0.0	2.7	0.2	2.0	3.7	1.8	31.0	11.5	25.4
TOTAL INVERTS	73.3	188.3	105.9	53.9	120.5	17.4	17.6	173.6	175.4	140.3	150.7
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	671.6	748.3	755.9	794.5	516.2	820.7	685.3	1402.0	3004.4	871.5	1156.2

Table A-1.--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	194	195	196	197	198	199	200	201	202	203	204
MONTH/DAY/YEAR	8/11/84	8/11/84	8/11/84	8/12/84	8/12/84	8/12/84	8/13/84	8/13/84	8/13/84	8/13/84	8/14/84
LATITUDE START	59 59.4	60 19.3	60 39.4	60 40.9	60 20.8	60 0.2	59 40.6	59 20.6	59 0.5	58 43.4	58 39.4
LONGITUDE START	174 36.3	174 43.4	174 48.5	175 27.6	175 23.8	175 16.5	175 10.4	175 5.9	175 0.8	174 54.2	175 34.2
LATITUDE END	60 0.9	60 20.7	60 40.9	60 39.6	60 19.3	59 59.8	59 39.5	59 19.4	58 59.2	58 41.9	58 40.7
LONGITUDE END	174 36.8	174 44.3	174 49.0	175 28.1	175 23.9	175 17.2	175 12.4	175 7.5	175 2.2	174 54.4	175 33.0
LORAN START	17176.20	17133.50	17099.90	16943.10	16953.40	16998.70	17028.40	17049.40	17071.00	17093.30	16879.10
LORAN START	49621.20	49541.60	49459.00	49497.70	49578.70	49658.00	49733.40	49810.40	49884.70	49943.70	49971.70
LORAN END	17172.90	17128.70	17096.70	16941.60	16963.30	16995.80	17019.10	17041.20	17063.40	17096.80	16886.30
LORAN END	49615.40	49536.30	49453.10	49504.00	49584.90	49664.40	49739.50	49816.30	49890.39	49948.90	49967.10
GEAR DEPTH	61	58	55	62	63	65	72	75	72	90	76
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.50	1.55	1.52	1.50	1.50	1.49	1.50	1.50	1.49	1.50	1.46
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	1213.1	595.1	237.7	793.8	275.8	487.9	465.8	697.6	306.4	1276.9	66.5
PAC COD	224.5	352.9	199.4	308.9	223.6	134.7	145.1	200.5	34.9	537.4	0.0
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.3	0.0
PAC HERRING	0.2	0.2	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	2.6	3.3	26.1	4.9	1.0	5.8	2.0	0.5	3.0	13.4	0.0
EELPOUTS	4.1	0.5	4.8	3.1	1.9	1.8	1.1	1.6	2.7	0.1	0.0
OTHER RNDFISH	0.1	0.3	1.1	1.2	0.1	0.2	0.2	0.7	1.2	1.9	0.0
TOT ROUNDFISH	1444.7	952.3	469.0	1111.9	504.5	630.4	614.3	900.9	348.3	1856.0	66.5
YELLOW SOLE	1.8	1.3	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROCK SOLE	5.4	1.1	6.8	1.1	0.5	0.0	1.7	7.5	0.0	57.2	0.2
FLATHEAD SOLE	0.0	0.0	0.0	1.4	1.1	0.7	2.3	27.7	29.7	25.4	4.7
ALASKA PLAICE	1.0	3.2	0.9	0.0	0.0	2.3	2.3	1.8	0.0	0.0	0.0
GREENLAND TBT	5.9	5.7	2.3	14.7	15.9	17.5	24.9	11.8	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	18.1	47.6	83.5	155.0	11.3
PAC HALIBUT	23.5	0.5	0.0	0.0	0.0	0.0	33.3	0.0	0.0	16.6	0.0
OTHER FLTFISH	7.3	41.7	49.0	41.5	2.7	0.7	0.9	0.0	1.0	0.5	0.0
TOT FLATFISH	44.9	53.5	60.8	58.7	20.3	21.1	83.6	96.4	114.1	254.6	16.2
SKATES	13.2	16.6	11.3	41.7	31.8	15.6	37.2	34.5	52.8	26.7	1.0
TOT ELASMOBR	13.2	16.6	11.3	41.7	31.8	15.6	37.2	34.5	52.8	26.7	1.0
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	5.7	0.0	0.0	0.0	13.7	8.8	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.3	10.2
TANNER, OPILIO	22.9	13.1	59.9	80.9	27.9	25.9	56.3	36.6	3.0	0.1	2.5
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	0.4	0.7	0.2	1.2	1.5	3.6	2.1	3.2	8.6	0.3	0.6
SNAILS	42.2	7.4	3.1	14.0	20.3	8.4	29.4	35.1	28.1	3.5	0.4
SHRIMP	0.2	0.2	0.0	0.1	0.2	0.3	0.6	0.3	0.3	0.0	0.0
STARFISH	18.1	9.6	3.1	15.0	11.5	61.6	6.3	20.0	14.1	4.6	1.7
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	1.6	1.4	0.0	0.0	0.0	0.1	0.0	0.0
OTHER INVERTS	9.8	4.6	6.8	2.2	7.3	7.3	5.7	11.5	6.9	7.1	23.3
TOTAL INVERTS	93.5	40.3	73.2	115.9	70.1	120.6	109.2	106.6	61.2	69.0	38.7
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1596.3	1062.7	614.3	1328.3	626.6	787.8	844.4	1138.4	576.5	2206.3	122.4

Table A-1---Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	205	206	207	208	209	210	211	212	213	214	215
MONTH/DAY/YEAR	8/14/84	8/14/84	8/14/84	8/15/84	8/15/84	8/15/84	8/15/84	8/15/84	8/16/84	8/16/84	8/16/84
LATITUDE START	58 59.5	59 19.8	59 39.4	59 59.2	60 19.5	60 39.5	60 39.7	60 21.1	60 40.6	60 39.4	60 20.8
LONGITUDE START	175 44.0	175 45.5	175 54.2	175 56.9	176 2.7	176 12.5	176 47.5	176 42.4	178 10.8	177 32.4	177 22.9
LATITUDE END	59 0.9	59 21.2	59 41.0	60 0.7	60 21.1	60 41.0	60 38.5	60 20.0	60 39.3	60 40.6	60 19.4
LONGITUDE END	175 44.8	175 45.5	175 54.6	175 57.0	176 2.9	176 13.0	176 49.1	176 44.1	178 12.5	177 30.6	177 23.9
LORAN START	16845.50	16853.30	16822.00	16817.20	16797.10	16760.30	16615.60	16626.10	16269.50	16423.30	16449.90
LORAN START	49909.40	49838.10	49770.10	49695.70	49620.00	49548.80	49578.40	49645.60	49634.40	49513.60	49674.60
LORAN END	16842.70	16854.40	16820.60	16817.40	16796.70	16758.60	16608.30	16617.90	16260.70	16436.90	16443.90
LORAN END	49904.90	49832.80	49764.50	49689.90	49614.00	49543.30	49584.30	49651.20	49640.10	49607.90	49680.50
GEAR DEPTH	75	76	77	73	68	67	72	77	91	82	84
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.47	1.51	1.52	1.50	1.52	1.49	1.49	1.48	1.51	1.52	1.52
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	220.9	419.8	954.8	897.0	1250.7	1032.2	514.8	271.9	254.2	600.6	359.7
PAC COD	85.7	112.5	106.6	146.3	155.4	124.3	89.4	144.0	108.4	139.3	214.5
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	0.0	2.4	1.4	2.9	0.8	2.4	1.7	1.5	1.0	0.3	1.5
EELPOUTS	0.1	22.9	7.0	1.3	0.7	3.4	1.8	2.3	1.6	1.0	8.2
OTHER RNDFISH	0.0	1.3	0.3	0.0	0.1	0.2	0.0	0.2	0.0	0.0	0.2
TOT ROUNDFISH	306.7	558.9	1070.1	1047.4	1407.6	1162.6	607.7	419.9	365.3	741.0	584.1
YELLOW SOLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROCK SOLE	0.0	1.0	2.0	0.0	0.9	0.6	0.4	0.5	0.0	0.0	0.0
FLATHEAD SOLE	1.0	7.3	1.6	3.9	0.7	1.7	0.6	4.3	0.1	0.3	1.0
ALASKA PLAICE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GREENLAND TBT	1.4	10.4	16.8	24.3	26.3	13.8	26.3	41.3	24.3	28.1	28.1
ARROWTOOTH FL	4.8	18.1	7.7	4.1	0.8	1.4	5.9	2.0	21.5	4.2	0.0
PAC HALIBUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER FLTFISH	0.0	0.0	0.0	0.0	0.8	0.6	2.9	0.5	11.3	10.7	13.6
TOT FLATFISH	7.1	36.8	28.1	32.2	29.5	18.1	36.1	48.5	57.3	43.3	42.7
SKATES	0.0	7.5	0.0	59.0	0.9	5.9	3.4	19.5	19.3	5.0	8.4
TOT ELASMOBRH	0.0	7.5	0.0	59.0	0.9	5.9	3.4	19.5	19.3	5.0	8.4
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
TANNER, BAIRDI	0.9	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, OPILIO	0.9	8.4	9.9	67.6	61.1	27.1	20.9	46.7	91.1	12.8	13.1
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	1.2	9.1	9.9	5.9	4.0	2.8	4.2	6.8	7.3	1.7	2.1
SNAILS	2.6	7.8	8.2	27.7	10.3	12.9	10.7	40.4	27.8	5.4	14.0
SHRIMP	0.0	2.0	1.1	0.6	0.7	0.3	0.5	1.6	1.3	0.4	1.7
STARFISH	1.9	101.8	70.0	68.4	22.9	15.3	40.6	26.7	20.4	9.8	184.6
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.7	0.0	0.0
OTHER INVERTS	1.7	11.7	11.3	8.8	6.3	2.0	8.3	3.4	11.3	4.1	5.5
TOTAL INVERTS	9.2	141.1	110.6	179.1	105.2	60.9	85.3	125.7	161.3	34.2	221.0
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	323.0	744.3	1208.9	1317.7	1543.3	1247.5	732.4	613.7	603.1	823.5	856.3

Table A-1--Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	216	217	218	219	220	221	222	223	224	225	226
MONTH/DAY/YEAR	8/16/84	8/17/84	8/17/84	8/17/84	8/17/84	8/18/84	8/18/84	8/18/84	8/18/84	8/19/84	8/19/84
LATITUDE START	60 0.5	60 0.6	60 0.0	59 40.5	59 40.1	59 19.9	59 19.7	59 0.6	58 59.6	58 59.0	58 40.6
LONGITUDE START	177 55.8	177 12.9	176 40.1	177 8.4	176 33.9	176 21.8	177 3.5	177 35.6	176 58.7	176 20.3	176 50.3
LATITUDE END	59 59.2	59 59.1	60 0.3	59 39.5	59 40.2	59 19.8	59 20.0	58 59.3	59 0.6	58 58.0	58 39.6
LONGITUDE END	177 57.3	177 14.0	176 37.1	177 10.5	176 30.8	176 23.9	177 6.4	177 37.2	176 56.3	176 22.4	176 52.2
LORAN START	16276.80	16472.40	16621.40	16468.70	16633.20	16672.50	16463.60	16265.80	16455.70	16655.30	16465.50
LORAN START	49763.40	49740.90	49723.10	49807.90	49791.60	49856.50	49874.30	49941.40	49934.80	49924.70	49987.00
LORAN END	16267.90	16465.90	16635.40	16457.70	16648.00	16660.70	16449.40	16254.90	16469.50	16643.10	16453.00
LORAN END	49768.40	49746.70	49720.00	49812.30	49789.50	49860.90	49874.50	49945.20	49931.20	49928.60	49990.30
GEAR DEPTH	80	77	79	94	75	76	85	76	78	75	75
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.50	1.52	1.50	1.49	1.50	1.48	1.50	1.49	1.52	1.51	1.48
PERFORMANCE / GEAR	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37	0 / 37
POLLOCK	869.4	253.3	304.4	591.9	589.2	1334.0	634.3	3576.7	341.8	145.6	63.7
PAC COD	151.5	175.3	173.7	122.0	250.2	116.2	162.6	754.1	40.6	173.7	6.8
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	1.0	2.6	0.7	3.9	4.7	3.6	6.1	0.0	10.9	5.7	0.0
EELPOUTS	1.0	2.7	8.4	1.6	17.7	7.7	3.9	0.0	3.6	4.3	0.0
OTHER RNDFISH	0.8	0.0	0.1	0.6	0.2	0.3	1.0	0.0	0.5	0.1	0.0
TOT ROUNDFISH	1023.7	434.0	487.3	725.0	861.9	1461.8	807.9	4330.9	397.3	329.5	70.5
YELLOW SOLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROCK SOLE	0.0	0.0	0.0	0.7	0.5	0.0	0.0	0.5	0.0	0.0	0.6
FLATHEAD SOLE	1.1	0.9	12.5	337.0	40.9	7.7	151.5	9.7	269.9	193.9	0.1
ALASKA PLAICE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GREENLAND TBT	5.2	8.4	18.6	1.1	4.5	11.2	0.0	2.7	1.0	0.0	0.0
ARROWTOOTH FL	0.9	7.0	15.9	112.9	15.0	7.7	18.6	21.0	21.8	31.8	2.0
PAC HALIBUT	0.0	0.0	0.0	4.5	0.0	0.0	7.9	0.0	2.4	1.5	0.0
OTHER FLTFISH	8.8	13.3	31.3	14.3	10.0	8.4	8.8	0.0	5.9	7.7	0.0
TOT FLATFISH	16.1	29.7	78.2	470.6	70.9	35.0	186.8	33.9	300.9	234.9	2.8
SKATES	20.2	26.5	12.2	40.4	44.7	51.8	2.5	9.1	17.7	34.9	0.0
TOT ELASMOBRH	20.2	26.5	12.2	40.4	44.7	51.8	2.5	9.1	17.7	34.9	0.0
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.4	0.0	0.0	0.0	0.0	0.3	0.0	12.2	0.6	0.1	1.0
TANNER, OPILIO	1.5	1.4	4.8	0.7	5.4	1.1	0.6	6.2	0.3	0.6	0.0
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	8.7	0.0	0.0	1.1	2.9	0.2
OTHER CRAB	9.8	4.4	2.5	17.8	11.5	22.5	3.9	0.0	10.3	9.4	0.3
SNAILS	18.7	13.2	17.4	75.5	25.4	18.2	21.0	0.5	15.2	23.9	0.1
SHRIMP	4.3	1.1	2.4	0.5	3.6	4.8	0.1	0.0	0.2	0.3	0.0
STARFISH	121.7	45.4	78.7	7.8	62.6	911.0	1.5	0.4	4.4	4.8	1.5
SQUID	0.0	0.0	0.0	0.1	0.0	0.7	0.1	0.0	0.2	0.3	0.0
OCTOPUS	0.5	0.5	0.4	1.7	0.0	1.4	0.0	0.0	0.0	0.1	0.0
OTHER INVERTS	40.7	7.8	12.4	16.4	18.6	24.4	4.2	0.0	2.5	5.1	157.4
TOTAL INVERTS	197.5	73.8	118.5	120.5	127.1	993.0	31.4	19.2	34.9	47.6	170.5
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1257.5	564.0	696.3	1356.5	1104.5	2541.7	1028.7	4393.1	750.9	646.8	243.8

Table A-1. --Station and catch data for the NOAA ship Chapman (cont'd).

HAUL #	227
MONTH/DAY/YEAR	8/19/84
LATITUDE START	58 40.0
LONGITUDE START	176 14.1
LATITUDE END	58 40.1
LONGITUDE END	176 11.3
LORAN START	16660.90
LORAN START	49981.00
LORAN END	16676.30
LORAN END	49979.80
GEAR DEPTH	77
DURATION IN HOURS	0.50
DISTANCE FISHED	1.46
PERFORMANCE / GEAR	0 / 37
POLLOCK	247.2
PAC COD	0.0
PAC OC PERCH	0.0
OTHER RCKFISH	0.0
SABLEFISH	0.0
PAC HERRING	0.0
ATKA MACKEREL	0.0
SCULPINS	0.1
EELPOUTS	0.0
OTHER RNDFISH	0.0
TOT ROUNDFISH	247.3
YELLOW SOLE	0.0
ROCK SOLE	1.4
FLATHEAD SOLE	2.5
ALASKA PLAICE	0.0
GREENLAND TBT	0.0
ARROWTOOTH FL	5.0
PAC HALIBUT	0.0
OTHER FLTFISH	0.3
TOT FLATFISH	9.2
SKATES	7.0
TOT ELASMOBRH	7.0
RED KING CRAB	0.0
BLUE KING CRAB	0.0
TANNER, BAIRDI	2.5
TANNER, OPILIO	0.9
TANNER, HYBRID	0.3
OTHER CRAB	0.8
SNAILS	0.5
SHRIMP	0.0
STARFISH	0.0
SQUID	0.3
OCTOPUS	15.0
OTHER INVERTS	0.7
TOTAL INVERTS	21.0
OTHER	0.0
TOTAL CATCH	284.5

Table A-2.--Station and catch data for the chartered vessel Alaska.

HAUL #	1	2	3	4	5	6	7	8	9	10	11
MONTH/DAY/YEAR	6/10/84	6/10/84	6/10/84	6/10/84	6/11/84	6/11/84	6/11/84	6/11/84	6/11/84	6/12/84	6/12/84
LATITUDE START	57 0.2	57 19.2	57 38.7	57 58.7	58 14.6	58 1.3	57 41.1	57 20.3	56 59.6	56 40.9	56 20.5
LONGITUDE START	159 6.4	159 3.9	159 1.3	158 57.9	160 4.4	160 12.4	160 15.9	160 18.0	160 19.7	160 21.1	161 28.9
LATITUDE END	57 1.9	57 20.9	57 40.1	57 59.6	58 13.8	57 59.9	57 40.0	57 19.7	56 58.1	56 39.5	56 19.7
LONGITUDE END	159 5.5	159 2.9	159 2.4	159 1.0	160 6.6	160 12.4	160 14.4	160 18.2	160 19.6	160 22.0	161 31.5
LORAN START	33179.40	33074.40	32960.60	32836.80	32870.20	32971.90	33104.10	33229.40	33345.80	33443.40	33705.90
LORAN START	45704.00	45681.70	45663.60	45645.00	46082.00	46133.70	46158.90	46177.40	46195.50	46211.50	46672.20
LORAN END	33168.70	33063.00	32955.10	32843.90	32880.10	32981.10	33107.20	33238.80	33353.20	33425.60	33715.90
LORAN END	45697.20	45675.10	45671.00	45664.80	46096.40	46134.10	46149.20	46179.20	46194.80	46218.80	46689.90
GEAR DEPTH	16	27	25	20	15	27	29	32	34	32	34
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.78	1.82	1.48	1.62	1.44	1.44	1.33	1.60	1.50	1.51	1.64
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 39	0 / 38	0 / 39	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	4.5	94.8	2473.4	440.2	0.0	33.3	156.1	33.0	216.5	264.9	94.1
PAC COD	392.1	165.1	172.9	378.4	171.5	443.2	229.2	147.5	107.4	21.8	66.5
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	7.3	0.0	0.0	6.7	4.9	68.7	0.0	0.0	1.9	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	11.6	4.7	0.0	24.2	120.8	23.5	0.7	0.5	8.5	1.8	3.2
EELPOUTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RNDFISH	1.9	7.6	0.8	0.3	13.5	2.7	2.8	5.4	0.2	2.1	3.0
TOT ROUNDFISH	417.4	272.1	2647.1	849.8	310.5	571.4	388.9	187.4	334.5	290.6	166.9
YELLOW SOLE	120.7	183.7	652.9	1248.1	1076.2	1106.9	404.8	3360.1	238.7	157.4	456.7
ROCK SOLE	1117.2	605.7	370.2	872.3	183.3	332.9	496.3	425.0	366.6	276.2	1099.6
FLATHEAD SOLE	0.0	1.5	0.0	0.0	0.0	8.3	18.3	14.3	32.4	5.4	29.6
ALASKA PLAICE	0.0	0.7	2.0	0.0	0.0	10.4	7.3	59.5	1.2	0.9	3.7
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
PAC HALIBUT	12.1	10.6	3.8	14.5	133.2	16.7	17.7	0.0	9.3	19.6	22.6
OTHER FLTFISH	49.2	7.8	3.0	44.3	2.4	19.8	7.3	4.4	8.5	3.6	46.2
TOT FLATFISH	1299.1	810.0	1032.0	2179.2	1395.2	1495.0	951.7	3863.3	657.3	463.4	1638.6
SKATES	0.0	51.7	0.0	0.0	0.0	0.0	8.5	0.0	15.3	23.6	27.5
TOT ELASMOBRH	0.0	51.7	0.0	0.0	0.0	0.0	8.5	0.0	15.3	23.6	27.5
RED KING CRAB	0.0	3.4	5.4	0.9	0.5	13.2	20.9	3001.4	42.9	8.6	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	1.2	0.5	0.0	0.0	0.5	4.3	7.7	23.8	3.9	1.4
TANNER, OPILIO	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.2	0.0	0.1	0.9
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	7.3	24.8	1.4	0.0	24.4	5.9	9.9	4.4	1.4	15.6	27.2
SNAILS	0.1	0.8	0.4	0.0	0.0	14.2	3.1	7.0	0.9	1.1	15.8
SHRIMP	0.2	0.1	0.0	0.3	0.4	0.2	0.1	0.0	0.2	0.1	0.0
STARFISH	548.5	1264.6	256.3	273.8	42.9	177.5	222.4	85.9	521.8	196.3	159.1
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	10.7	61.0	53.3	30.0	36.3	43.0	185.4	104.9	298.1	50.0	80.2
TOTAL INVERTS	566.9	1360.9	317.2	305.0	104.3	254.4	447.5	3211.5	888.9	275.7	275.7
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	2283.3	2494.7	3996.3	3333.9	1910.0	2320.8	1796.5	7262.2	1996.1	1053.3	2118.8

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	12	13	14	15	16	17	18	19	20	21	22
MONTH/DAY/YEAR	6/12/84	6/12/84	6/13/84	6/13/84	6/13/84	6/13/84	6/14/84	6/14/84	6/14/84	6/14/84	6/15/84
LATITUDE START	56 38.9	56 58.6	57 19.3	57 39.2	57 58.9	58 19.2	58 40.1	58 21.2	58 0.8	57 41.2	57 20.6
LONGITUDE START	161 35.0	161 34.0	161 32.1	161 30.0	161 29.1	161 24.9	162 31.5	162 42.8	162 44.5	162 45.3	162 47.1
LATITUDE END	56 39.9	56 60.0	57 20.9	57 40.8	58 0.1	58 20.1	58 39.3	58 20.1	57 59.3	57 39.6	57 19.2
LONGITUDE END	161 37.1	161 35.0	161 33.3	161 30.1	161 29.3	161 27.2	162 31.8	162 41.5	162 43.3	162 44.6	162 47.6
LORAN START	33633.20	33529.30	33409.00	33284.40	33157.30	33009.20	33003.10	33172.90	33323.80	33458.40	33592.00
LORAN START	46707.30	46693.90	46673.30	46651.10	46637.20	46602.00	47013.30	47102.10	47130.20	47149.70	47174.30
LORAN END	33633.50	33524.40	33403.00	33275.30	33148.90	33007.70	33009.40	33177.90	33331.50	33466.60	33601.90
LORAN END	45720.70	46699.90	46680.50	46651.60	46638.10	46616.20	47015.00	47094.60	47123.50	47146.10	47173.60
GEAR DEPTH	49	37	31	29	30	17	25	17	22	22	27
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.50	1.46	1.65	1.53	1.36	1.51	0.74	1.30	1.67	1.59	1.45
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 39	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	106.5	909.4	118.0	26.3	26.1	0.0	42.6	3.6	25.9	1014.8	163.6
PAC COD	36.5	7.3	10.3	43.8	116.3	55.5	150.1	100.7	247.6	107.6	71.8
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	1.1	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	0.0	0.0	0.0	3.9	7.3	21.2	16.1	37.7	16.2	1.8	1.9
EELPOUTS	0.0	0.0	0.0	0.0	0.0	8.4	0.0	0.0	0.0	0.0	0.0
OTHER RNDFISH	0.5	0.1	0.7	4.0	7.5	0.5	5.5	0.5	0.6	1.5	1.2
TOT ROUNDFISH	143.6	917.9	129.0	78.0	157.4	88.0	214.4	142.6	290.4	1125.8	238.4
YELLOW SOLE	523.6	511.7	374.6	657.6	744.0	428.5	246.8	557.0	1158.2	866.2	754.5
ROCK SOLE	107.5	284.9	109.8	86.7	155.1	105.8	21.3	310.3	109.0	132.6	552.7
FLATHEAD SOLE	87.3	72.6	32.8	55.2	18.1	2.6	0.0	0.2	34.9	16.6	62.7
ALASKA PLAICE	62.9	52.5	36.9	21.0	36.1	9.9	11.8	19.5	121.6	47.4	20.5
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	3.9	4.8	8.5	4.5	5.4	4.2	25.8	17.3	28.7	4.7	0.0
OTHER FLTFISH	0.3	0.0	5.1	19.3	10.8	4.2	2.7	18.6	6.3	21.8	76.9
TOT FLATFISH	786.3	926.6	567.8	844.2	969.5	555.2	308.4	922.9	1458.1	1089.3	1467.3
SKATES	9.1	0.0	8.2	19.3	22.5	0.0	0.0	4.5	15.7	7.7	17.1
TOT ELASMOBRN	9.1	0.0	8.2	19.3	22.5	0.0	0.0	4.5	15.7	7.7	17.1
RED KING CRAB	57.2	29.9	103.9	127.7	84.4	2.9	0.0	0.8	20.0	14.1	51.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	123.9	28.1	52.4	13.6	0.1	0.0	0.0	0.0	0.0	0.0	12.2
TANNER, OPILIO	7.7	8.5	2.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.5
TANNER, HYBRID	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	44.8	2.3	30.3	24.9	50.0	6.5	10.3	4.8	17.5	23.5	59.8
SNAILS	14.8	0.0	63.4	54.9	65.7	0.7	0.6	0.5	12.3	33.4	196.7
SHRIMP	0.0	0.1	0.2	0.5	0.0	0.1	1.1	0.1	0.2	0.0	0.1
STARFISH	79.2	32.4	41.0	14.9	290.2	252.5	22.0	99.1	212.7	192.2	38.7
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	143.4	64.4	351.4	31.4	63.7	18.8	8.0	2.9	4.4	7.8	18.3
TOTAL INVERTS	471.2	165.7	645.1	267.9	554.0	281.4	41.9	108.1	267.0	271.0	368.5
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1410.3	2010.2	1350.1	1209.3	1703.4	924.6	564.7	1178.1	2031.2	2493.8	2091.3

Table A-2 --Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	23	24	25	26	27	28	29	30	31	32	33
MONTH/DAY/YEAR	6/15/84	6/15/84	6/15/84	6/15/84	6/16/84	6/16/84	6/16/84	6/17/84	6/17/84	6/17/84	6/17/84
LATITUDE START	57 1.2	56 41.2	56 20.8	56 0.6	55 40.2	55 19.8	55 38.9	55 59.7	56 19.1	56 39.3	56 59.1
LONGITUDE START	162 47.1	162 47.0	162 48.3	162 48.9	162 49.7	164 2.8	164 0.2	163 59.9	163 59.8	164 0.0	164 0.0
LATITUDE END	56 59.9	56 39.6	56 19.2	55 59.0	55 38.7	55 21.2	55 40.2	56 1.2	56 20.6	56 40.8	57 0.5
LONGITUDE END	162 46.5	162 46.5	162 48.7	162 49.4	162 49.9	164 3.2	164 0.3	163 59.7	164 1.0	164 0.6	164 0.7
LORAN START	33703.80	33809.30	33910.40	33999.80	34081.60	34342.10	34273.80	34196.90	34116.00	34022.00	33918.00
LORAN START	47193.30	47186.70	47200.70	47205.40	47208.70	47667.90	47664.10	47672.00	47676.30	47677.80	47673.30
LORAN END	33709.30	33816.00	33919.20	34007.70	34087.30	34339.20	34269.70	34190.30	34112.80	34016.30	33912.20
LORAN END	47179.70	47186.10	47203.90	47208.90	47209.70	47671.70	47665.60	47671.00	47684.30	47681.80	47677.50
GEAR DEPTH	33	40	43	43	27	43	53	50	48	42	38
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.43	1.59	1.69	1.61	1.42	1.37	1.29	1.52	1.62	1.55	1.46
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	5.0	39.0	52.6	3007.3	482.3	625.1	3110.3	2093.7	1537.4	69.8	1.1
PAC COD	3.2	9.1	56.7	105.0	38.2	21.8	50.8	86.3	34.3	24.5	0.5
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	1.8	8.6	2.7	0.0	14.7	3.6	0.0	0.0	0.0	2.5	0.0
EELPOUTS	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	6.4	1.4	0.2
OTHER GNDFISH	0.1	0.1	0.2	0.0	1.1	0.0	1.8	0.0	0.3	0.2	0.2
TOT ROUNDFISH	10.1	56.9	112.2	3115.3	536.3	650.5	3163.3	2180.4	1578.3	97.3	2.0
YELLOW SOLE	556.6	295.3	156.0	387.1	2286.2	161.9	143.6	70.6	510.8	259.8	335.2
ROCK SOLE	29.0	61.7	59.4	121.3	1388.1	103.4	110.3	70.6	83.9	19.1	0.7
FLATHEAD SOLE	24.5	47.2	83.0	49.8	131.2	11.3	80.6	33.0	96.6	52.2	9.1
ALASKA PLAICE	49.9	78.9	98.4	38.2	9.1	0.0	3.9	17.3	49.5	102.1	292.1
GREENLAND TgT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	5.7	15.0	0.7	31.3	40.3	3.9	0.0	0.0	0.0
PAC HALIBUT	0.0	21.7	29.8	13.8	0.0	20.0	29.2	2.4	0.0	2.5	13.2
OTHER FLTFISH	4.5	0.0	3.6	1.7	25.5	3.6	19.4	5.8	0.3	0.0	0.0
TOT FLATFISH	664.5	504.8	435.9	627.0	3840.8	331.6	427.2	203.7	741.0	426.6	650.2
SKATES	0.0	6.8	9.1	1.7	34.6	41.7	42.0	70.6	12.7	8.2	13.6
TOT ELASMOBR	0.0	6.8	9.1	1.7	34.6	41.7	42.0	70.6	12.7	8.2	13.6
RED KING CRAB	5.0	3.6	84.6	56.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	9.1	6.4	4.7	27.2	8.9	7.7	17.7	14.6	6.0	3.9	0.1
TANNER, OPILIO	13.2	11.2	7.0	6.8	1.1	1.8	10.4	9.6	2.6	5.7	17.6
TANNER, HYBRID	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	24.4	5.5	10.1	47.4	33.4	3.7	27.2	195.7	43.0	11.7	3.4
SNAILS	59.3	5.9	4.0	13.4	18.6	1.7	19.4	165.3	92.5	56.8	35.3
SHRIMP	0.1	0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.0	0.3	0.2
STARFISH	24.9	13.2	10.0	28.3	256.9	45.0	12.2	0.0	0.0	0.0	12.9
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
OTHER INVERTS	57.7	51.8	36.8	96.9	26.2	15.2	72.5	134.8	42.5	10.6	51.5
TOTAL INVERTS	194.9	97.5	157.2	276.5	350.4	71.0	158.8	519.9	186.6	88.9	120.5
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	869.5	666.1	714.5	4020.4	4762.7	1094.9	3791.3	2974.6	2518.7	611.0	786.3

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	34	35	36	37	38	39	40	41	42	43	44
MONTH/DAY/YEAR	6/17/84	6/18/84	6/18/84	6/18/84	6/18/84	6/18/84	6/19/84	6/19/84	6/19/84	6/19/84	6/20/84
LATITUDE START	57 19.1	57 39.9	57 58.9	58 19.3	58 39.1	58 59.8	59 19.8	59 20.2	59 39.2	59 39.9	59 39.8
LONGITUDE START	164 0.0	164 0.0	164 0.3	164 0.3	164 0.5	164 0.1	164 1.0	165 17.7	165 55.8	166 35.2	167 14.8
LATITUDE END	57 20.4	57 41.4	58 0.6	58 21.1	58 40.8	59 0.3	59 19.7	59 20.5	59 40.1	59 40.0	59 38.6
LONGITUDE END	164 0.3	163 59.5	164 1.0	164 1.1	164 0.5	164 0.6	164 3.3	165 20.9	165 58.3	166 39.3	167 16.5
LORAN START	33801.40	33666.90	33533.70	33378.50	33218.00	33047.40	32859.90	33018.80	32901.00	32971.50	33044.40
LORAN START	47662.90	47645.80	47627.40	47600.40	47571.40	47535.50	47502.80	47941.00	48091.60	48297.70	48488.60
LORAN END	33793.80	33655.60	33523.50	33366.80	33204.00	33035.90	32874.50	33022.50	32897.10	32976.30	33061.30
LORAN END	47663.90	47641.10	47629.80	47602.60	47568.50	47535.90	47517.70	47957.90	48101.90	48312.90	48502.00
GEAR DEPTH	33	27	25	22	19	15	10	11	14	15	16
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.38	1.49	1.68	1.76	1.66	1.45	1.57	1.65	1.50	1.57	1.50
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	39.0	81.1	8.6	28.3	0.1	0.1	0.7	0.1	0.1	2.5	25.9
PAC COD	12.2	22.5	51.3	34.9	41.1	107.9	3.6	39.0	63.0	196.4	71.7
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.4	1.9
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	0.0	2.5	4.2	53.3	76.3	25.0	0.6	40.8	14.9	19.3	67.4
EELPOUTS	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RNDFISH	0.9	2.7	1.2	1.6	1.4	4.7	12.6	10.1	3.8	10.1	24.6
TOT ROUNDFISH	52.6	168.8	65.3	168.1	118.9	137.7	17.4	90.5	81.9	229.6	191.3
YELLOW SOLE	561.1	960.8	392.9	1268.3	1984.1	936.4	253.1	494.0	140.5	169.6	247.2
ROCK SOLE	20.4	129.2	38.1	97.9	210.9	160.9	0.0	30.4	8.6	11.3	13.1
FLATHEAD SOLE	12.7	17.2	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALASKA PLAICE	77.1	44.0	23.6	39.1	286.5	118.9	10.4	9.5	5.0	4.1	124.3
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	0.0	0.0	0.0	0.0	3.1	4.0	0.0	3.0	0.0	20.5	4.9
OTHER FLTFISH	0.0	0.0	2.3	1.1	13.2	71.3	7.3	15.9	6.4	13.4	10.7
TOT FLATFISH	671.3	1151.2	460.8	1406.4	2497.9	1291.6	270.8	552.7	160.6	224.0	405.2
SKATES	8.2	6.2	4.5	0.0	11.9	0.0	0.0	0.0	0.0	0.0	0.0
TOT ELASMOBRA	8.2	6.2	4.5	0.0	11.9	0.0	0.0	0.0	0.0	0.0	0.0
RED KING CRAB	0.0	0.8	0.0	10.4	5.9	0.0	0.0	0.0	0.0	0.0	2.8
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	2.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, OPILIO	17.5	0.6	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	94.4	464.2	60.5	22.4	15.8	20.3	11.4	7.9	1.6	1.7	7.8
SNAILS	12.7	345.9	68.9	29.1	2.5	0.0	0.0	1.4	0.0	0.0	0.5
SHRIMP	0.0	0.4	0.3	0.2	0.1	0.2	1.3	0.0	0.1	0.2	0.2
STARFISH	15.4	44.1	95.3	227.3	497.4	536.8	77.1	73.5	157.9	55.8	115.4
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	96.0	334.4	30.2	10.9	11.5	2.0	0.7	4.6	4.2	1.0	0.7
TOTAL INVERTS	238.1	1190.5	255.9	300.6	533.2	559.3	90.5	87.4	163.9	58.7	129.3
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	970.2	2516.6	786.6	1875.2	3161.9	1988.5	378.7	730.6	406.4	512.3	716.9

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	45	46	47	48	49	50	51	52	53	54	55
MONTH/DAY/YEAR	6/20/84	6/20/84	6/20/84	6/20/84	6/21/84	6/21/84	6/21/84	6/21/84	6/21/84	6/22/84	6/22/84
LATITUDE START	59 41.2	60 1.4	60 18.6	60 20.0	59 0.1	58 41.1	58 21.1	58 1.4	57 41.0	57 13.7	56 58.9
LONGITUDE START	167 47.9	168 0.5	167 58.2	167 19.8	165 18.9	165 17.9	165 17.3	165 14.5	165 14.4	165 13.6	165 11.6
LATITUDE END	59 42.5	60 3.1	60 20.2	60 20.0	58 58.3	58 39.4	58 19.7	58 0.1	57 39.5	57 19.9	56 57.4
LONGITUDE END	167 47.0	168 0.5	167 57.3	167 16.4	165 18.5	165 18.4	165 18.1	165 14.4	165 14.5	165 14.1	165 10.8
LORAN START	33086.40	32869.10	32660.00	32588.40	33218.30	33392.70	33567.00	33720.30	33873.50	34020.90	34133.10
LORAN START	48638.00	48602.40	48515.60	48346.80	48001.60	48043.10	48084.40	48105.00	48135.90	48154.90	48153.80
LORAN END	33070.30	32846.80	32639.80	32583.00	33234.00	33406.70	33580.80	33730.70	33884.40	34014.60	34133.10
LORAN END	48628.40	48594.70	48504.90	48331.60	48003.40	48049.90	48092.60	48106.70	48138.50	48157.50	48149.00
GEAR DEPTH	17	14	17	16	15	20	24	27	34	37	39
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.33	1.71	1.65	1.72	1.73	1.66	1.43	1.37	1.50	1.30	1.41
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	8.6	16.8	19.5	0.1	7.3	9.1	2.3	19.5	16.2	20.0	10.4
PAC COD	68.9	38.1	93.0	121.8	58.1	60.7	3.6	2.4	1.2	46.3	1.6
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.7	0.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	29.6	93.1	31.5	29.0	108.2	11.9	0.1	1.9	0.0	4.1	0.0
EELPOUTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
OTHER RNDFISH	3.8	5.4	3.9	10.2	2.0	6.0	0.2	0.4	1.2	0.1	0.0
TOT ROUNDFISH	110.9	158.4	148.6	160.7	177.7	87.7	6.2	24.1	18.5	70.5	12.3
YELLOW SOLE	221.4	223.6	638.7	1193.4	340.5	1472.1	356.1	646.1	935.5	369.2	255.4
ROCK SOLE	27.7	43.1	18.1	4.9	122.2	18.2	9.3	19.5	13.0	2.8	0.0
FLATHEAD SOLE	1.6	0.0	0.0	0.0	0.0	0.0	0.5	6.8	6.1	7.9	3.4
ALASKA PLAICE	212.3	268.1	59.4	9.8	193.2	145.8	12.2	45.4	149.9	86.2	139.3
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	0.0	0.0	4.8	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0
OTHER FLTFISH	6.8	5.9	1.0	3.5	18.4	10.1	1.0	0.0	0.0	0.0	0.0
TOT FLATFISH	469.7	540.7	722.0	1216.6	674.5	1549.5	379.1	717.8	1104.4	466.2	398.0
SKATES	0.0	0.0	0.0	0.0	0.0	35.4	7.3	5.5	0.0	2.7	3.6
TOT ELASMOBRH	0.0	0.0	0.0	0.0	0.0	35.4	7.3	5.5	0.0	2.7	3.6
RED KING CRAB	1.6	1.7	0.0	0.0	0.5	2.9	0.0	2.5	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	2.3
TANNER, OPILIO	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.4	30.4	139.0	13.4
TANNER, HYBRID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	2.9	1.0	4.0	25.9	9.3	11.9	37.9	365.3	879.0	40.9	143.7
SNAILS	1.1	0.1	0.6	2.9	0.2	12.3	24.2	206.9	315.0	88.3	60.6
SHRIMP	0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.0	0.1	0.0
STARFISH	207.3	62.1	142.9	179.2	103.9	536.6	81.2	28.7	58.7	90.5	93.5
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	1.2	0.5	2.5	2.9	0.5	3.8	14.7	860.7	239.1	45.8	15.1
TOTAL INVERTS	214.4	65.6	150.1	211.2	115.1	567.5	158.5	1466.9	1572.2	418.6	333.6
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	795.0	764.6	1020.7	1588.5	967.3	2340.1	551.1	2214.3	2695.3	957.0	747.6

Table A-2. --Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	68	69	70	71	72	73	74	75	76	77	78
MONTH/DAY/YEAR	6/29/84	6/29/84	6/30/84	6/30/84	6/30/84	6/30/84	7/ 1/84	7/ 1/84	7/ 1/84	7/ 1/84	7/ 2/84
LATITUDE START	56 19.3	56 39.4	56 59.3	57 19.6	57 38.9	57 59.0	58 18.9	58 39.0	58 58.9	59 18.7	59 19.4
LONGITUDE START	166 25.1	166 26.0	166 27.9	166 28.8	166 30.0	166 31.3	166 33.6	166 33.9	166 35.0	166 35.3	167 56.5
LATITUDE END	56 20.8	56 41.0	57 0.7	57 21.1	57 40.3	58 0.4	58 20.5	58 40.6	59 0.4	59 20.1	59 17.6
LONGITUDE END	166 25.8	166 25.7	166 28.8	166 28.9	166 30.6	166 32.1	166 33.3	166 33.6	166 34.6	166 35.4	167 56.6
LORAN START	34548.20	34467.00	34372.90	34253.30	34121.00	33965.60	33796.50	33605.70	33407.30	33202.80	33355.10
LORAN START	48632.90	48651.90	48664.60	48656.50	48636.40	48602.60	48563.40	48502.30	48440.40	48376.50	48773.80
LORAN END	34544.70	34456.90	34367.90	34243.70	34112.70	33956.00	33780.50	33589.90	33391.90	33187.90	33374.90
LORAN END	48638.80	48650.80	48670.10	48655.60	48638.30	48604.40	48556.70	48495.40	48433.00	48372.00	48787.20
GEAR DEPTH	57	47	41	33	37	34	25	22	19	15	21
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.55	1.59	1.51	1.52	1.43	1.50	1.66	1.54	1.47	1.42	1.71
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	3578.1	107.5	5.9	22.0	33.1	23.9	20.4	5.5	29.3	5.9	51.5
PAC COD	15.7	61.7	30.7	54.2	73.9	116.5	57.6	29.8	91.1	94.8	67.9
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.1	11.2
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	22.0	2.3	1.5	3.4	4.1	14.6	4.6	8.8	99.1	2.5	28.1
EELPOUTS	1.3	0.5	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RNDFISH	0.0	0.1	0.0	0.2	0.1	1.0	1.8	1.6	15.8	15.1	8.2
TOT ROUNDFISH	3617.2	172.0	39.1	80.2	111.2	156.1	84.4	45.8	245.9	119.4	166.9
YELLOW SOLE	15.7	194.1	489.2	496.4	357.9	1449.1	362.0	1174.8	612.2	165.3	621.4
ROCK SOLE	0.6	23.6	17.3	6.8	5.0	16.6	22.7	50.8	90.1	46.3	69.9
FLATHEAD SOLE	66.1	124.3	22.8	5.6	5.4	6.3	0.1	1.1	0.0	0.0	1.3
ALASKA PLAICE	6.3	11.3	122.3	111.7	143.3	284.0	62.1	36.4	111.0	93.9	104.3
GREENLAND TBT	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	23.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	0.0	0.0	0.0	2.4	0.0	0.0	0.0	3.6	13.3	12.8	0.0
OTHER FLTFISH	15.7	0.0	0.0	0.0	0.0	0.0	1.4	1.6	17.3	10.4	1.5
TOT FLATFISH	128.2	353.3	651.5	622.8	512.0	1756.0	448.3	1268.3	844.4	328.7	778.4
SKATES	0.0	5.0	25.3	0.0	2.7	0.0	7.3	3.3	6.3	4.5	4.0
TOT ELASMOBRH	0.0	5.0	25.3	0.0	2.7	0.0	7.3	3.3	6.3	4.5	4.0
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	3.6	1.8	0.0	0.0	2.7
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	2.9	4.1	2.4	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
TANNER, OPILIO	4.5	8.4	97.2	133.0	228.9	23.2	1.1	0.1	0.0	0.0	0.1
TANNER, HYBRID	0.1	0.0	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	12.6	67.4	14.9	160.5	40.1	246.2	57.0	8.2	8.0	4.9	49.4
SNAILS	27.1	139.9	108.0	212.6	65.8	600.9	39.9	20.4	4.5	1.0	39.3
SHRIMP	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.2	0.5	0.2	0.3
STARFISH	28.3	35.3	144.5	76.9	44.3	81.3	47.2	410.5	314.2	112.0	332.1
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	18.0	3.3	43.9	180.3	29.2	364.4	30.1	30.1	2.8	1.2	5.4
TOTAL INVERTS	93.6	258.4	411.1	764.4	408.5	1316.1	179.0	471.4	330.1	119.3	449.4
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	3939.0	788.8	1127.1	1467.5	1034.4	3229.2	719.0	1788.8	1426.6	571.9	1398.7

Table A-2. --Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	79	80	81	82	83	84	85	86	87	88	89
MONTH/DAY/YEAR	7/ 2/84	7/ 2/84	7/ 2/84	7/ 2/84	7/ 3/84	7/ 3/84	7/ 3/84	7/ 7/84	7/ 7/84	7/ 7/84	7/ 7/84
LATITUDE START	59 0.7	58 41.1	58 20.8	58 1.0	57 41.1	57 21.1	57 0.3	56 48.9	56 59.7	56 41.0	56 21.2
LONGITUDE START	167 53.1	167 51.6	167 49.7	167 48.4	167 45.7	167 43.8	167 41.7	169 18.8	168 58.0	168 54.1	168 51.5
LATITUDE END	58 59.2	58 39.6	58 19.2	57 59.5	57 39.5	57 19.9	56 59.0	56 49.2	57 0.7	56 39.7	56 20.1
LONGITUDE END	167 52.8	167 51.4	167 49.8	167 48.5	167 45.4	167 43.2	167 40.4	169 21.3	168 56.5	168 53.5	168 50.6
LORAN START	33561.40	33775.00	33986.30	34179.30	34349.10	34496.40	34617.80	35007.00	34894.00	34949.40	34984.40
LORAN START	48849.00	48930.80	49008.40	49077.60	49124.10	49154.30	49159.10	49787.20	49667.20	49617.30	49549.30
LORAN END	33578.00	33791.40	34002.30	34193.50	34360.40	34502.80	34620.40	35014.10	34883.90	34951.30	34985.80
LORAN END	48854.70	48936.50	49015.50	49083.50	49125.90	49152.20	49150.50	49803.30	49657.90	49611.30	49540.80
GEAR DEPTH	23	25	32	37	37	40	43	45	43	37	71
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.53	1.57	1.58	1.47	1.51	1.27	1.53	1.41	1.28	1.33	1.29
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	74.1	41.8	20.8	49.4	35.3	67.9	208.7	27.7	43.5	982.5	197.5
PAC COD	193.1	100.6	13.3	22.9	66.1	30.7	29.0	20.4	24.9	99.2	135.5
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	1.3	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	22.5	10.1	5.0	1.0	7.7	5.9	3.9	45.4	35.4	49.9	11.8
EELPOUTS	0.0	0.0	0.0	0.1	0.0	0.6	0.0	0.3	0.0	0.3	0.0
OTHER RNDFISH	7.9	10.8	4.2	0.4	1.2	0.0	0.2	0.3	0.1	0.6	0.0
TOT ROUNDFISH	298.9	163.3	43.2	73.9	110.9	105.1	241.8	94.3	104.0	1131.7	394.9
YELLOW SOLE	938.9	1232.0	752.6	195.5	547.3	268.1	200.9	119.3	180.1	33.6	0.0
ROCK SOLE	197.0	74.3	6.7	6.4	15.4	53.2	105.2	47.4	83.0	18.0	35.8
FLATHEAD SOLE	2.6	5.4	3.3	13.6	6.2	13.0	6.8	27.0	13.2	55.7	35.8
ALASKA PLAICE	164.0	125.4	484.3	105.2	74.5	39.0	5.0	9.1	10.0	2.0	1.3
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.1	0.2	3.4	34.9	26.2	34.5
PAC HALIBUT	5.3	0.9	1.0	0.4	0.0	0.0	0.0	0.0	0.0	4.2	24.7
OTHER FLTFISH	9.3	27.9	0.0	0.0	0.0	0.0	0.2	20.1	11.0	9.2	14.7
TOT FLATFISH	1317.1	1465.7	1247.9	321.1	643.4	373.4	318.4	226.3	332.1	148.9	147.4
SKATES	22.5	7.8	0.0	2.3	0.0	3.5	10.0	4.8	6.8	42.6	37.2
TOT ELASMOBRH	22.5	7.8	0.0	2.3	0.0	3.5	10.0	4.8	6.8	42.6	37.2
RED KING CRAB	1.5	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	1.4	2.9	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	1.7	0.1	1.2	0.6	0.3	1.5	17.0
TANNER, OPILIO	0.0	0.0	19.5	69.3	294.6	31.8	27.8	20.9	30.8	122.0	15.0
TANNER, HYBRID	0.0	0.0	0.0	0.1	0.8	0.7	0.0	0.0	0.0	1.0	0.0
OTHER CRAB	15.9	59.3	208.2	86.4	114.4	138.2	23.5	29.9	19.2	12.1	2.4
SNAILS	97.7	75.8	135.8	46.3	143.9	81.5	22.5	28.9	4.7	22.4	10.0
SHRIMP	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
STARFISH	540.2	402.8	269.2	35.5	52.3	115.0	49.3	0.0	6.8	6.5	11.5
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
OTHER INVERTS	13.0	16.0	318.4	44.8	141.2	143.3	22.0	22.4	16.2	7.7	136.8
TOTAL INVERTS	668.5	554.0	951.1	232.4	750.3	513.6	150.4	102.7	78.0	173.3	192.7
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	2307.0	2190.8	2242.3	679.6	1504.7	995.6	720.5	428.1	520.9	1496.4	772.1

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	90	91	92	93	94	95	96	97	99	100	101
MONTH/DAY/YEAR	7/ 8/84	7/ 8/84	7/ 8/84	7/ 9/84	7/ 8/84	7/ 9/84	7/ 9/84	7/ 9/84	7/ 9/84	7/10/84	7/10/84
LATITUDE START	55 20.8	55 40.0	55 60.0	56 19.3	56 39.0	57 10.1	57 10.6	57 29.4	57 41.1	57 49.7	57 59.8
LONGITUDE START	167 32.3	167 34.8	167 36.4	167 39.3	167 39.8	169 19.3	169 1.8	169 12.4	169 1.5	169 22.7	169 4.3
LATITUDE END	55 20.8	55 40.7	56 1.2	56 20.6	56 40.1	57 9.5	57 19.0	57 30.7	57 42.5	57 50.6	58 0.7
LONGITUDE END	167 30.2	167 32.8	167 34.6	167 38.9	167 38.7	169 16.7	169 4.4	169 13.0	169 1.6	169 24.3	169 2.4
LORAN START	34878.00	34854.60	34819.40	34777.90	34711.10	18744.10	34792.90	34739.10	34591.50	34556.70	34400.50
LORAN START	49931.00	48995.30	49052.40	49109.00	49133.60	49807.20	49676.10	49711.10	49596.00	49670.60	49519.40
LORAN END	34873.10	34843.40	34811.50	34772.50	34703.00	18785.20	34799.30	34728.00	34577.50	34550.20	34386.20
LORAN END	48919.10	48985.90	49044.10	49103.30	49132.60	49789.10	49692.10	49709.10	49590.00	49673.80	49504.70
GEAR DEPTH	82	75	74	72	58	40	40	38	37	36	39
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.22	1.32	1.39	1.35	1.27	1.59	1.44	1.41	1.41	1.26	1.34
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	1 / 38	0 / 38	0 / 38
POLLOCK	394.3	203.7	866.2	359.0	830.1	55.4	39.5	22.2	22.2	15.0	76.3
PAC COD	67.3	54.9	5.4	34.5	36.7	31.3	48.1	6.4	23.4	49.5	100.3
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	0.4	0.8	0.7	29.3	102.5	38.9	44.2	5.7	18.7	79.6	3.0
EELPOUTS	0.8	1.0	0.4	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.9
OTHER RNDFISH	7.4	3.2	16.9	7.4	0.0	0.5	0.9	0.3	0.5	0.4	1.0
TOT ROUNDFISH	491.5	268.5	889.6	430.3	969.6	126.1	132.6	34.6	64.7	144.4	181.6
YELLOW SOLE	0.0	0.0	0.0	0.0	17.1	186.0	153.3	219.5	268.9	525.0	934.1
ROCK SOLE	0.0	0.0	0.0	0.2	1.0	103.8	73.3	83.5	31.6	45.7	16.5
FLATHEAD SOLE	59.3	41.0	189.4	75.1	15.1	27.2	2.5	9.1	7.7	1.3	9.0
ALASKA PLAICE	0.0	0.0	0.0	0.0	6.3	78.6	12.2	140.6	122.7	114.0	259.0
GREENLAND TBT	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	24.0	25.4	130.3	54.0	7.6	1.5	0.1	0.0	0.0	0.0	0.0
PAC HALIBUT	0.0	3.2	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER FLTFISH	22.4	10.5	38.6	16.4	16.4	7.1	0.0	0.0	0.0	0.0	0.0
TOT FLATFISH	126.6	91.1	365.2	145.6	63.5	404.2	241.4	452.7	430.9	686.1	1218.6
SKATES	33.7	42.2	26.5	60.8	96.0	18.1	1.8	2.7	16.4	35.1	26.9
TOT ELASMOBRH	33.7	42.2	26.5	60.8	96.0	18.1	1.8	2.7	16.4	35.1	26.9
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	18.4	5.7	0.9	0.7	1.4	2.4
TANNER, BAIRDI	43.5	25.2	12.4	5.1	0.1	1.0	1.5	0.1	0.2	0.2	0.1
TANNER, OPILIO	5.0	1.4	3.4	41.0	12.7	21.5	19.1	11.0	139.5	79.6	104.0
TANNER, HYBRID	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
OTHER CRAB	4.5	4.7	13.2	24.5	140.1	23.1	23.5	24.3	28.0	194.3	123.3
SNAILS	7.4	6.6	18.1	10.4	84.1	0.8	5.9	0.0	77.6	237.0	80.1
SHRIMP	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0
STARFISH	0.0	0.0	0.0	0.5	14.5	80.6	6.0	4.3	58.5	58.4	37.7
SQUID	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	215.3	37.8	37.3	20.4	9.4	515.6	66.6	30.8	162.3	108.1	23.1
TOTAL INVERTS	276.9	75.9	84.5	101.8	261.1	661.4	128.3	71.5	457.8	679.9	371.8
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	928.6	477.7	1365.9	738.5	1390.2	1209.9	504.2	561.5	969.8	1545.5	1798.9

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	102	103	104	105	106	107	108	109	110	111	112
MONTH/DAY/YEAR	7/10/84	7/10/84	7/10/84	7/11/84	7/11/84	7/11/84	7/11/84	7/12/84	7/12/84	7/12/84	7/12/84
LATITUDE START	58 19.6	58 39.5	58 59.9	59 19.7	59 39.7	59 59.4	60 19.9	60 18.2	60 0.9	59 40.3	59 20.8
LONGITUDE START	169 7.4	169 9.6	169 11.1	169 14.5	169 16.5	169 19.5	169 20.3	170 38.2	170 37.7	170 35.2	170 32.7
LATITUDE END	58 21.1	58 41.3	59 1.6	59 21.2	59 41.1	60 0.9	60 21.5	60 16.7	59 59.4	59 38.6	59 19.3
LONGITUDE END	169 7.8	169 10.2	169 11.1	169 14.4	169 16.2	169 20.2	169 19.9	170 37.9	170 37.1	170 35.4	170 32.6
LORAN START	34181.60	33951.40	33709.20	33475.10	33234.20	32997.50	32748.70	32840.40	33049.40	33298.30	33534.40
LORAN START	49425.60	49322.70	49213.30	49117.40	49016.30	48923.90	48823.10	49078.50	49168.90	49275.30	49379.50
LORAN END	34165.30	33931.10	33689.10	33456.50	33216.50	32980.70	32729.00	32858.30	33068.10	33318.70	33552.50
LORAN END	49419.50	49315.10	49203.80	49108.50	49007.80	48919.00	48814.10	49085.50	49175.80	49285.20	49387.80
GEAR DEPTH	37	35	29	27	25	25	24	34	36	36	37
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.44	1.61	1.57	1.52	1.44	1.49	1.50	1.56	1.60	1.68	1.50
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	50.4	24.2	24.0	106.8	20.4	32.8	0.6	0.1	0.2	0.1	10.3
PAC COD	47.6	63.2	50.7	207.1	33.4	37.5	0.0	0.0	0.0	0.0	37.1
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.1	0.1	0.1	0.7
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	65.8	19.9	8.8	3.8	34.2	34.1	91.2	31.3	56.7	41.3	19.5
EELPOUTS	0.0	0.0	0.0	0.0	3.6	4.0	0.0	8.4	71.2	38.6	13.7
OTHER RNDFISH	1.2	0.7	2.1	1.1	0.9	1.0	4.1	3.0	1.3	2.4	0.4
TOT ROUNDFISH	165.0	108.0	85.6	319.0	92.9	109.3	95.9	42.9	129.6	82.4	82.2
YELLOW SOLE	1103.2	520.5	540.3	368.3	246.4	234.1	647.5	54.9	109.8	120.7	699.4
ROCK SOLE	5.6	4.3	32.0	35.6	5.8	13.4	2.0	0.1	0.4	0.3	0.2
FLATHEAD SOLE	17.2	5.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.7
ALASKA PLAICE	214.2	492.6	677.7	358.0	422.3	77.6	100.2	115.2	135.6	61.7	85.0
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	0.0	3.8	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER FLTFISH	0.4	2.8	4.0	7.0	10.2	13.8	3.3	2.7	5.0	12.2	8.3
TOT FLATFISH	1340.6	1029.6	1254.0	802.9	684.7	338.9	753.0	173.0	250.7	194.9	795.1
SKATES	0.0	7.4	0.0	35.6	7.3	0.0	0.0	0.0	2.7	0.0	3.9
TOT ELASMOBRH	0.0	7.4	0.0	35.6	7.3	0.0	0.0	0.0	2.7	0.0	3.9
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0
BLUE KING CRAB	2.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, OPILIO	14.6	11.3	0.6	0.9	1.9	2.0	0.5	90.5	59.1	32.0	54.9
TANNER, HYBRID	0.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
OTHER CRAB	85.7	78.4	366.7	68.3	102.6	146.8	109.0	3.7	3.3	6.4	11.5
SNAILS	86.1	136.5	219.0	149.7	130.3	182.4	105.6	18.4	17.0	23.0	79.6
SHRIMP	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0
STARFISH	32.9	60.1	107.3	85.3	95.9	108.4	152.9	42.6	10.4	3.7	10.9
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	58.0	868.9	1365.9	125.4	70.1	163.8	70.2	3.4	1.6	3.7	5.6
TOTAL INVERTS	279.8	1155.2	2058.4	429.5	400.3	623.6	440.1	158.9	91.7	77.8	162.3
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	1785.4	2300.1	3398.1	1587.0	1185.7	1071.8	1288.9	374.8	474.7	353.1	1044.5

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	124	125	126	127	128	129	130	131	132	133	134
MONTH/DAY/YEAR	7/15/84	7/15/84	7/20/84	7/20/84	7/20/84	7/20/84	7/21/84	7/21/84	7/21/84	7/21/84	7/21/84
LATITUDE START	56 40.3	56 20.6	56 40.1	56 59.1	57 19.2	57 39.5	57 59.4	58 19.3	58 39.3	58 59.4	59 19.1
LONGITUDE START	170 6.0	170 3.9	171 20.8	171 23.8	171 27.5	171 32.7	171 36.1	171 39.2	171 43.1	171 48.6	171 50.1
LATITUDE END	56 38.9	56 19.2	56 41.4	57 0.6	57 20.7	57 40.6	58 0.8	58 20.8	58 40.9	59 0.9	59 20.5
LONGITUDE END	170 5.7	170 3.5	171 22.1	171 24.9	171 26.5	171 34.1	171 36.0	171 39.1	171 43.1	171 47.7	171 49.4
LORAN START	18548.70	18405.10	18197.50	18269.80	18287.90	18249.40	18197.00	18135.80	18068.20	17993.50	17937.30
LORAN START	50001.50	49900.60	50146.20	35004.40	34874.40	34688.10	34480.40	34259.30	34031.20	33798.90	33570.10
LORAN END	18538.40	18395.30	18197.40	18268.00	18296.20	18239.90	18194.80	18132.90	18063.70	17993.10	17936.20
LORAN END	49993.90	49892.10	50150.50	34995.30	34866.60	34674.60	34465.90	34242.80	34012.80	33781.60	33553.60
GEAR DEPTH	53	61	62	60	56	55	53	52	52	48	44
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.42	1.50	1.53	1.54	1.54	1.36	1.38	1.50	1.61	1.55	1.47
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	1926.7	5.4	1993.5	272.6	2169.9	51.7	624.8	131.5	55.3	99.7	13.6
PAC COD	59.6	47.2	53.8	8.2	0.0	71.0	167.1	226.8	110.2	43.0	4.5
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	3.3	0.5	2.0	2.2	0.0	0.0	0.1
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	22.9	29.1	3.1	4.4	64.2	12.8	19.5	6.5	15.9	207.4	19.5
EELPOUTS	2.8	0.0	2.1	0.0	0.0	0.0	3.0	1.5	2.3	3.1	0.0
OTHER RNDFISH	34.7	9.4	0.0	17.7	0.4	0.1	0.1	0.3	0.1	0.1	0.4
TOT ROUNDFISH	2046.7	91.1	2052.5	302.9	2237.8	136.1	816.6	368.6	183.8	352.4	38.2
YELLOW SOLE	1.0	0.0	0.0	0.0	1.7	14.1	59.1	228.2	117.3	62.0	44.9
ROCK SOLE	12.5	0.0	0.0	2.0	3.3	1.6	21.4	18.8	47.6	1.6	0.7
FLATHEAD SOLE	101.2	62.6	113.9	30.4	38.2	17.2	54.0	49.1	10.9	1.6	3.6
ALASKA PLAICE	2.8	0.0	0.0	0.0	0.0	17.2	42.8	96.8	248.6	261.4	31.2
GREENLAND TBT	0.0	0.0	0.0	2.3	2.2	0.0	5.6	5.8	3.4	2.1	0.0
ARROWTOOTH FL	24.9	6.8	60.1	11.8	10.0	2.3	12.2	19.5	0.1	0.0	0.0
PAC HALIBUT	7.6	15.3	15.4	31.7	3.3	4.8	4.4	21.0	0.0	0.0	0.0
OTHER FLTFISH	7.2	19.5	22.3	0.6	0.0	0.2	0.0	0.0	0.0	7.7	0.0
TOT FLATFISH	157.2	104.2	212.1	78.7	58.6	57.3	199.6	439.2	428.1	336.3	130.4
SKATES	97.1	70.3	111.9	0.0	21.6	8.6	159.0	27.4	8.6	16.3	0.9
TOT ELASMOBRH	97.1	70.3	111.9	0.0	21.6	8.6	159.0	27.4	8.6	16.3	0.9
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0
TANNER, BAIRDI	26.9	18.8	23.8	19.1	4.5	0.5	1.3	1.1	0.0	0.0	0.0
TANNER, OPILIO	4.2	0.0	56.5	85.7	60.1	46.7	58.5	20.0	95.3	128.0	64.0
TANNER, HYBRID	0.4	0.0	1.1	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0
OTHER CRAB	39.6	5.6	40.4	12.2	29.0	5.0	5.3	20.4	5.2	8.9	8.4
SNAILS	22.2	6.0	21.4	21.7	57.0	79.1	91.4	59.3	38.6	60.5	26.7
SHRIMP	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
STARFISH	9.7	14.5	45.6	4.1	4.2	8.2	24.4	82.4	28.1	66.2	20.4
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
OTHER INVERTS	9.4	16.4	5.4	12.5	10.9	9.6	2.3	6.3	1.0	32.9	1.1
TOTAL INVERTS	112.9	61.3	194.1	156.0	166.0	147.3	183.1	189.4	172.5	296.5	120.5
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	2413.9	326.9	2570.6	537.6	2484.0	349.3	1358.3	1024.7	793.0	1001.5	290.0

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	135	136	137	138	139	140	141	142	143	144	145
MONTH/DAY/YEAR	7/22/84	7/22/84	7/22/84	7/22/84	7/22/84	7/23/84	7/23/84	7/23/84	7/23/84	7/24/84	7/24/84
LATITUDE START	59 39.3	59 49.1	59 59.4	60 9.4	60 19.4	60 59.1	60 59.8	60 40.9	60 40.1	60 21.2	60 9.4
LONGITUDE START	171 53.6	172 15.6	171 59.3	172 17.3	172 5.2	173 28.5	174 6.2	174 7.5	173 29.5	173 23.3	173 36.3
LATITUDE END	59 40.7	59 50.6	60 0.5	60 10.9	60 21.0	61 0.2	61 0.1	60 39.6	60 40.2	60 20.2	60 8.5
LONGITUDE END	171 53.7	172 15.1	171 57.6	172 16.7	172 4.0	173 30.5	174 9.4	174 6.7	173 26.0	173 25.5	173 34.1
LORAN START	17873.50	17768.70	17804.30	17718.00	17738.00	17376.50	17241.50	17257.40	17400.40	17451.50	17417.60
LORAN START	33335.40	33221.80	33101.80	32983.70	32870.20	32449.00	32452.50	32652.50	32656.30	32861.90	32988.60
LORAN END	17869.90	17767.20	17806.10	17716.70	17735.60	17368.20	17229.70	17261.80	17413.30	17444.70	17427.50
LORAN END	33318.80	33204.90	33088.50	32971.20	32851.30	32438.30	32450.70	32665.20	32654.10	32872.30	32990.50
GEAR DEPTH	42	41	36	31	32	41	45	48	36	33	42
DURATION IN HOURS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.43	1.50	1.40	1.54	1.71	1.41	1.57	1.28	1.77	1.43	1.40
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	3.6	0.2	1.4	1.8	0.0	0.1	0.2	0.5	0.2	0.5	2.0
PAC COD	0.0	0.1	0.9	0.5	0.1	0.1	0.0	0.0	0.0	1.1	0.1
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER ROCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.1	0.1	0.0	0.0	56.0	0.1	0.0	0.1	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCULPINS	15.6	30.4	96.2	168.9	940.3	22.0	98.8	23.8	308.7	36.1	170.7
EELPOUTS	7.0	5.9	2.7	1.8	0.0	10.4	17.9	9.5	0.0	3.4	2.5
OTHER RNDFISH	1.0	1.8	1.5	0.3	2.9	0.6	3.5	3.3	1.4	7.8	1.6
TOT ROUNDFISH	27.4	38.5	102.6	173.2	999.3	33.4	120.4	37.2	310.2	48.9	176.9
YELLOW SOLE	24.5	56.2	32.2	98.9	67.2	0.1	0.2	0.1	0.8	5.4	10.9
ROCK SOLE	0.1	0.5	0.7	0.2	0.7	0.7	0.0	0.1	0.0	0.0	0.2
FLATHEAD SOLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALASKA PLAICE	57.6	46.7	36.3	170.6	47.5	0.6	0.9	0.0	58.0	64.6	98.4
GREENLAND TBT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HALIBUT	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.5
OTHER FLTFISH	10.9	16.3	1.1	0.2	0.0	7.4	5.4	4.0	4.7	0.9	2.7
TOT FLATFISH	93.8	119.7	70.3	269.9	115.4	8.8	6.5	4.3	73.6	71.7	111.9
SKATES	2.3	7.3	1.8	1.1	6.3	0.0	0.0	4.1	5.7	1.6	1.1
TOT ELASMOBRH	2.3	7.3	1.8	1.1	6.3	0.0	0.0	4.1	5.7	1.6	1.1
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	0.0	0.0	2.7	6.3	2.9	1.8	0.0	0.8	4.5	17.7	4.5
TANNER, BAIRDI	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
TANNER, OPILIO	50.8	81.6	21.6	2.0	0.9	231.3	72.1	137.9	25.9	2.9	8.6
TANNER, HYBRID	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
OTHER CRAB	12.8	18.2	49.8	41.0	311.9	3.3	0.0	0.8	24.5	5.4	15.2
SNAILS	39.6	29.3	47.2	18.8	77.9	1.9	0.0	0.0	13.0	3.4	10.3
SHRIMP	0.1	0.1	0.3	0.1	1.5	0.2	0.3	0.1	0.0	1.6	0.4
STARFISH	26.8	18.1	23.8	29.2	28.7	9.3	1.1	1.4	4.9	5.2	5.4
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER INVERTS	1.3	1.5	9.9	26.2	425.7	13.8	0.0	0.9	7.3	109.0	48.5
TOTAL INVERTS	131.4	149.2	155.4	124.1	949.6	261.6	73.6	141.8	80.1	150.3	93.9
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	254.9	314.7	330.1	568.3	1971.2	303.7	200.4	187.3	469.5	272.6	383.8

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd).

HAUL #	146	147	148	149	150	151	152	153	154	155	156
MONTH/DAY/YEAR	7/24/84	7/24/84	7/24/84	7/24/84	7/25/84	7/25/84	7/25/84	7/25/84	7/25/84	7/26/84	7/26/84
LATITUDE START	60 1.0	59 50.4	59 40.9	59 30.8	59 21.5	59 0.6	58 40.8	58 20.9	58 1.0	57 40.3	57 20.9
LONGITUDE START	173 17.8	173 34.7	173 13.8	173 29.8	173 10.3	173 5.1	172 59.8	172 56.0	172 51.3	172 46.5	172 42.9
LATITUDE END	59 59.5	59 49.0	59 39.4	59 29.4	59 19.9	58 59.1	58 39.4	58 19.7	57 59.5	57 38.7	57 19.4
LONGITUDE END	173 18.1	173 34.7	173 13.2	173 29.3	173 10.1	173 5.4	172 59.6	172 55.8	172 51.5	172 45.9	172 42.1
LORAN START	17503.70	17449.10	17551.00	17495.70	17593.30	17649.40	17700.60	17741.30	17779.20	17806.00	17807.70
LORAN START	33082.70	33191.70	33301.50	33401.80	33512.00	33737.10	33946.90	34149.30	34344.00	34530.10	34681.00
LORAN END	17505.00	17450.90	17555.80	17499.80	17598.40	17650.00	17703.10	17742.90	17773.30	17803.60	17810.30
LORAN END	33098.50	33206.60	33318.00	33417.20	33528.70	33752.60	33961.00	34161.90	34357.10	34543.50	34692.90
GEAR DEPTH	41	52	52	57	55	58	62	60	60	66	65
DURATION IN HOURS	0.60	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
DISTANCE FISHED	1.46	1.40	1.54	1.46	1.57	1.52	1.37	1.29	1.51	1.57	1.57
PERFORMANCE / GEAR	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38	0 / 38
POLLOCK	1.4	649.0	182.0	1838.8	505.3	2129.5	677.2	280.1	183.9	313.7	11.3
PAC COD	0.0	146.3	4.7	56.7	128.4	41.8	200.8	239.9	74.8	83.9	134.3
PAC OC PERCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER RCKFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
SABLEFISH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAC HERRING	0.0	0.0	0.0	0.0	0.0	0.7	0.9	0.0	0.0	0.0	0.0
ATKA MACKEREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
SCULPINS	47.6	66.3	23.0	16.2	13.4	61.9	72.9	12.0	24.5	8.8	13.3
EELPOUTS	0.4	13.8	4.0	1.5	31.6	3.7	3.2	0.8	2.9	6.3	0.2
OTHER RNDFISH	1.1	3.2	0.5	2.9	0.2	1.1	0.3	0.2	0.3	0.8	6.1
TOT ROUNDFISH	50.4	898.6	214.2	1916.0	678.9	2239.7	955.3	533.6	286.6	413.5	165.9
YELLOW SOLE	34.0	81.7	23.6	25.9	11.3	0.0	3.8	0.6	0.2	0.7	0.0
ROCK SOLE	0.5	16.6	1.1	10.8	7.9	1.5	7.0	15.2	14.7	2.2	6.9
FLATHEAD SOLE	0.0	0.0	0.0	0.0	0.0	0.0	1.5	26.4	28.1	11.1	103.6
ALASKA PLAICE	46.9	32.6	7.5	35.9	4.1	2.4	4.8	44.9	27.2	12.2	0.0
GREENLAND TBT	0.0	0.4	0.0	3.3	4.9	3.7	5.7	6.8	0.0	0.0	2.0
ARROWTOOTH FL	0.0	0.0	0.0	0.0	0.0	0.0	5.1	15.9	27.0	28.6	34.5
PAC HALIBUT	0.8	8.3	0.0	7.9	19.3	0.0	0.0	0.0	0.0	12.1	31.6
OTHER FLTFISH	1.0	90.0	6.6	19.6	6.6	1.9	0.0	0.0	0.0	0.7	1.4
TOT FLATFISH	83.2	229.6	38.8	102.3	54.6	9.5	27.9	109.8	97.2	67.6	180.0
SKATES	5.7	3.5	10.0	18.6	42.9	33.5	12.7	55.6	19.7	37.6	9.1
TOT ELASMOBRH	5.7	3.5	10.0	18.6	42.9	33.5	12.7	55.6	19.7	37.6	9.1
RED KING CRAB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLUE KING CRAB	3.4	7.3	2.7	6.4	6.3	0.0	0.0	0.0	0.0	0.0	0.0
TANNER, BAIRDI	0.0	0.0	0.0	0.2	0.4	1.5	0.8	2.7	19.5	18.6	50.1
TANNER, OPILIO	16.6	12.7	13.2	16.1	11.1	20.7	18.4	10.0	59.6	26.4	4.1
TANNER, HYBRID	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.9	0.0	0.0
OTHER CRAB	12.9	3.8	1.5	0.7	1.7	12.9	18.1	8.8	18.4	6.4	3.8
SNAILS	8.2	9.6	4.7	24.5	26.1	83.0	278.1	106.0	35.3	25.4	7.8
SHRIMP	0.2	0.3	0.4	0.7	0.4	0.6	0.4	0.2	0.0	0.2	0.2
STARFISH	1.2	0.6	3.4	27.3	19.3	25.1	17.1	7.9	10.7	5.4	5.9
SQUID	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
OCTOPUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
OTHER INVERTS	36.5	4.8	4.3	3.8	3.4	22.8	9.3	11.2	10.1	1.0	29.1
TOTAL INVERTS	78.9	39.0	30.1	79.7	69.3	166.7	342.1	147.2	154.5	83.5	101.0
OTHER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL CATCH	218.2	1170.7	293.0	2116.6	845.6	2448.4	1338.0	846.2	558.1	602.3	455.9

Table A-2.--Station and catch data for the chartered vessel Alaska (cont'd)

HAUL #	157	158
MONTH/DAY/YEAR	7/26/84	7/26/84
LATITUDE START	57 C.6	56 40.8
LONGITUDE START	172 39.3	172 33.9
LATITUDE END	56 59.1	56 39.4
LONGITUDE END	172 38.9	172 33.9
LORAN START	17733.60	17745.30
LORAN START	34810.20	34910.60
LORAN END	17781.70	17740.10
LORAN END	34818.90	34915.80
GEAR DEPTH	67	85
DURATION IN HOURS	0.50	0.50
DISTANCE FISHED	1.52	1.39
PERFORMANCE / GEAR	0 / 38	0 / 38
POLLOCK	139.3	1.1
PAC COD	74.8	16.3
PAC OC PERCH	C.0	0.0
OTHER ROCKFISH	C.0	0.0
SABLEFISH	C.0	20.9
PAC HERRING	0.0	0.0
ATKA MACKEREL	C.0	0.0
SCULPINS	9.2	4.8
EELPOUTS	C.0	0.0
OTHER RNDFISH	0.7	0.0
TOT ROUNDFISH	223.9	43.1
YELLOW SOLE	C.0	0.0
ROCK SOLE	C.7	8.4
FLATHEAD SOLE	67.4	22.9
ALASKA PLAICE	C.0	0.0
GREENLAND TBT	C.0	0.0
ARROWTOOTH FL	11.8	72.8
PAC HALIBUT	3.8	11.3
OTHER FLTFISH	2.3	6.6
TOT FLATFISH	85.9	122.5
SKATES	12.0	12.2
TOT ELASMOBRH	12.0	12.2
RED KING CRAB	C.0	0.0
BLUE KING CRAB	C.0	0.0
TANNER, BAIRDI	27.4	5.5
TANNER, OPILIO	0.5	0.0
TANNER, HYBRID	C.0	0.0
OTHER CRAB	1.5	2.1
SNAILS	6.1	7.4
SHRIMP	C.1	0.1
STARFISH	2.9	6.8
SQUID	C.0	0.0
OCTOPUS	0.0	0.0
OTHER INVERTS	1.6	1.4
TOTAL INVERTS	40.1	23.4
OTHER	0.0	0.0
TOTAL CATCH	361.9	201.2

APPENDIX B

Rank Order of Relative Abundance of Fish and Invertebrates

Appendix B contains a computer listing of all fish and invertebrate species taken during the 1984 demersal trawl survey in order of relative abundance in kilograms per hectare.

List of Tables

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Table B-1.--Rank order of relative abundance (kg/ha) of fish and invertebrates.

TOTAL TRAWLS 355 TOTAL SPECIES 345 TOTAL EFFORT 1611.9 HA

SPECIES RANKED BY MEAN CPUE (KG/HA)

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT *---CONFIDENCE LIMITS---*		PROPORTION	CUMULATIVE PROPORTION	NAME
1	21740	98.69505	82.74463	114.64547	0.32365077	0.32365077	WALLEYE POLLOCK
2	10210	72.43803	65.33787	79.53820	0.23754611	0.56119689	YELLOWFIN SOLE
3	21720	21.51516	19.23928	23.79104	0.07055469	0.63175158	PACIFIC COD
4	10260	20.82052	17.74500	23.89604	0.06827674	0.70002832	ROCK SOLE
5	10285	15.64520	12.14799	19.14241	0.05130532	0.75133364	ALASKA PLAICE
6	81742	11.14530	9.21150	13.07910	0.03654879	0.78788243	PURPLE-ORANGE SEASTAR
7	10130	7.33697	6.30109	8.37285	0.02406013	0.81194256	FLATHEAD SOLE & BERING FLOUNDER
8	68580	5.83549	5.01659	6.65439	0.01913631	0.83107888	TANNER CRAB (OPILIO)
9	10110	3.93631	3.14654	4.72628	0.01290834	0.84398722	ARROWTOOTH & KAMCHATKA FLOUNDERS
10	71884	3.71703	2.87885	4.55520	0.01218925	0.85617646	NEPTUNEA HERCS
11	69088	3.19099	2.16541	4.21657	0.01046422	0.86664069	PAGURUS TRIGONOCHEIRUS
12	69322	3.17012	0.05168	6.28855	0.01039577	0.87703646	RED KING CRAB
13	83020	1.94085	0.72459	3.15712	0.00636464	0.88340109	GORGONOCEPHALUS CARYI
14	10120	1.93736	1.56585	2.30887	0.00635319	0.88975429	PACIFIC HALIBUT
15	00400	1.92426	1.42410	2.42442	0.00631024	0.89606452	SKATE UNIDENT
16	00471	1.87726	1.54199	2.21254	0.00615611	0.90222063	ALASKA SKATE
17	98082	1.87001	0.64378	3.09625	0.00613233	0.90835296	SIYELA RUSTICA
18	71820	1.76563	1.28585	2.24541	0.00579003	0.91414300	NEPTUNEA PRIBILOFFENSIS
19	43000	1.36686	0.72387	2.00985	0.00448236	0.91862535	SEA ANEMONE UNIDENT
20	69120	1.35169	0.81838	1.88500	0.00443260	0.92305796	PAGURUS CAPILLATUS
21	68560	1.07715	0.84176	1.31254	0.00353230	0.92659025	TANNER CRAB (BAIRDI)
22	21371	1.04251	0.80946	1.27556	0.00341870	0.93000696	PLAIN SCULPIN
23	71870	0.99588	0.67479	1.31698	0.00326580	0.93327475	NEPTUNEA LYRATA

Table B-1.--Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
24	83010	0.98943	0.55730	1.42156	0.00324464	0.93651939	BASKETSTARFISH UNIDENT
25	71882	0.95165	0.77960	1.12370	0.00312074	0.93964013	NEPTUNEA VENTRICOSA
26	81780	0.87064	0.00000	1.93470	0.00285509	0.94249522	COMMON MUD STAR
27	21348	0.83048	0.39634	1.26461	0.00272338	0.94521861	BUTTERFLY SCULPIN
28	69060	0.79268	0.48820	1.09716	0.00259945	0.94781805	PAGURUS ALEUTICUS
29	21375	0.75908	0.22286	1.29526	0.00248919	0.95030724	MYOXOCEPHALUS VERRUCOSUS (SYN. M. GROENLANDICUS)
30	80590	0.74627	0.52718	0.96535	0.00244724	0.95275448	LEPTASTERIAS POLARIS
31	40500	0.65673	0.50250	0.81096	0.00215362	0.95490810	JELLYFISH UNIDENT
32	10211	0.60902	0.43563	0.78241	0.00199716	0.95690526	LONGHEAD DAB
33	21347	0.60328	0.29145	0.91510	0.00197833	0.95888358	YELLOW IRISH LORD
34	21420	0.54957	0.34703	0.75292	0.00180353	0.96068712	BIGMOUTH SCULPIN
35	98200	0.46578	0.00000	1.12720	0.00152743	0.96221455	SEA POTATO UNIDENT
36	24184	0.46037	0.28142	0.63933	0.00150971	0.96372426	SPARSE TOOTHED LYCOD
37	98105	0.43432	0.20451	0.66413	0.00142426	0.96514852	BOLTENIA OVIFERA
38	98205	0.43237	0.20631	0.65843	0.00141787	0.96656639	HALOCYNTHIA (TETHYUM) AURANTIUM
39	98100	0.41493	0.16495	0.66491	0.00136067	0.96792706	SEA ONION UNIDENT
40	21370	0.39358	0.15545	0.63170	0.00129065	0.96921772	GREAT SCULPIN
41	10115	0.38528	0.30177	0.46879	0.00126344	0.97048116	GREENLAND TURBOT
42	21375	0.38102	0.14858	0.61346	0.00124548	0.97173063	MYOXOCEPHALUS SP
43	69090	0.34593	0.20296	0.48890	0.00113442	0.97286505	PAGURUS ECHOTENSIS
44	21110	0.33957	0.11743	0.56250	0.00111485	0.97397990	PACIFIC HERRING
45	91000	0.32647	0.12474	0.52819	0.00107058	0.97505048	SPONGE UNIDENT
46	80020	0.32179	0.14465	0.49893	0.00105525	0.97610574	EVASTERIAS ECHINOSOMA
47	10200	0.27929	0.15239	0.40618	0.00091586	0.97702160	REX SOLE
48	91050	0.27624	0.09230	0.46017	0.00090586	0.97792746	BARREL SPONGE
49	68577	0.24918	0.10673	0.39158	0.00081706	0.97874451	HYAS COAE (ROUNDED SPINED)
50	21368	0.24840	0.13299	0.36381	0.00081459	0.97955910	WARTY SCULPIN
51	69095	0.23172	0.06686	0.39657	0.00075987	0.98031897	PAGURUS RATHBUNI

Table B-1. --Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
52	72500	0.21252	0.13831	0.28672	0.00069691	0.98101589	FUSITRITON OREGONENSIS
53	69323	0.20501	0.14849	0.26153	0.00067229	0.98169818	BLUE KING CRAB
54	20510	0.19857	0.07600	0.32114	0.00065118	0.98233935	SABLEFISH
55	00472	0.19568	0.00909	0.38227	0.00064168	0.98298104	ALEUTIAN SKATE
56	10220	0.17935	0.07055	0.28815	0.00058814	0.98356917	STARRY FLOUNDER
57	20040	0.17355	0.13606	0.21112	0.00056926	0.98413843	STURGEON POACHER
58	21316	0.17288	0.06567	0.26068	0.00056651	0.98470535	ARMORHEAD SCULPIN
59	72752	0.17281	0.12454	0.22109	0.00056671	0.98527206	SILKY WHELK
60	20720	0.16288	0.07245	0.25332	0.00053414	0.98580620	SEARCHER
61	23010	0.15788	0.06583	0.24992	0.00051772	0.98632392	EULACHON
62	24185	0.14979	0.10954	0.19003	0.00049120	0.98681512	WATTLED EELPOUT
63	69070	0.14803	0.08561	0.21045	0.00048542	0.98730055	PAGURUS CONFRAGOSUS
64	98000	0.14713	0.05413	0.24013	0.00048247	0.98778302	TUNICATE UNIDENT
65	71753	0.14457	0.04066	0.24849	0.00047410	0.98825712	PYRULOFUSUS DEFORMIS
66	71001	0.14428	0.10889	0.17967	0.00047315	0.98873027	SNAIL (GASTROPOD) EGGS
67	85201	0.14114	0.02377	0.25850	0.00046283	0.98919310	CUCUMARIA SALLAX
68	45000	0.13985	0.00000	0.34641	0.00045873	0.98965182	CTENOPHORA
69	80200	0.13675	0.10003	0.17354	0.00044857	0.99010039	LETHASTERIAS NANIMENSIS
70	43010	0.13045	0.00000	0.29247	0.00042792	0.99052831	METRIDIUM SP
71	98310	0.12252	0.05874	0.18630	0.00040178	0.99093009	APLIDIUM SP
72	72743	0.11406	0.07185	0.15627	0.00037404	0.99130413	BUCCINUM ANGULOSUM
73	43020	0.10656	0.00959	0.20354	0.00034946	0.99165359	METRIDIUM SENILE
74	72755	0.10427	0.06654	0.14200	0.00034193	0.99199552	BUCCINUM POLARE
75	71756	0.09976	0.06982	0.12973	0.00032719	0.99232271	VOLUTOPSIUS FRAGILIS
76	71835	0.09170	0.06029	0.12310	0.00030070	0.99262342	NEPTUNEA BOREALIS
77	68781	0.09066	0.05358	0.12779	0.00029737	0.99292079	TELMESSUS CRAB
78	85000	0.07916	0.01044	0.16988	0.00025565	0.99321644	SEA CUCUMBER UNIDENT
79	69400	0.08053	0.05886	0.10221	0.00026409	0.99348054	KOREAN HORSEHAIR CRAB

Table B-1. --Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
80	82510	0.08007	0.00000	0.18231	0.00026256	0.99374310	GREEN SEA URCHIN
81	80000	0.07775	0.04721	0.10829	0.00025497	0.99399807	STARFISH UNIDENT
82	82730	0.07755	0.00817	0.14693	0.00025431	0.99425237	SAND DOLLAR UNIDENT
83	69061	0.06750	0.04745	0.08756	0.00022137	0.99447374	LABIDOCHIRUS (PAGURUS) SPLENDESCENS
84	30420	0.06457	0.00000	0.17155	0.00021174	0.99468548	NORTHERN ROCKFISH
85	66031	0.06417	0.03816	0.09018	0.00021043	0.99489591	PINK SHRIMP
86	21313	0.06295	0.00000	0.13260	0.00020656	0.99510247	GYMNOCANTHUS SP
87	80010	0.05846	0.00000	0.12420	0.00019176	0.99529424	EVASTERIAS SP
88	78010	0.05659	0.01960	0.09357	0.00018556	0.99547980	OCTOPUS UNIDENT
89	23041	0.05505	0.04404	0.06613	0.00018064	0.99566044	CAPELIN
90	82500	0.05325	0.00000	0.11494	0.00017463	0.99583507	SEA URCHIN UNIDENT
91	10270	0.05146	0.00000	0.10616	0.00016874	0.99600380	BUTTER SOLE
92	41201	0.04955	0.01825	0.08093	0.00016262	0.99616643	EUNEPHTHYA (GERSEMIA) SP
93	24191	0.04890	0.01476	0.08305	0.00016037	0.99632680	SHORTFIN EELPOUT
94	80594	0.04325	0.01850	0.06800	0.00014183	0.99646863	LEPTASTERIAS ARCTICA
95	68578	0.04236	0.02862	0.05614	0.00013899	0.99660761	HYAS COAE (SHARP SPINED)
96	69121	0.04024	0.01246	0.06802	0.00013197	0.99673958	ELASSOCHIRUS CAVIMANUS
97	72740	0.03601	0.01481	0.05721	0.00011809	0.99685768	BUCCINUM SP
98	71961	0.03558	0.01940	0.05255	0.00011758	0.99697565	CLINOPEGMA (ANCISTROLEPIS) MAGNA
99	56311	0.03538	0.02212	0.04864	0.00011602	0.99709168	EUNOE NODOSA
100	68590	0.03505	0.01838	0.05172	0.00011494	0.99720662	TANNER CRAB (HYBRID)
101	21438	0.03440	0.00998	0.05883	0.00011282	0.99731944	THORNY SCULPIN
102	98300	0.03319	0.00000	0.07166	0.00010883	0.99742827	COMPOUND ASCIDIAN UNIDENT
103	21735	0.03263	0.00453	0.06074	0.00010701	0.99753528	SAFFRON COD
104	00420	0.03236	0.00000	0.08600	0.00010611	0.99764140	BIG SKATE
105	83000	0.02874	0.00000	0.05796	0.00009423	0.99773563	BRITTLESTARFISH UNIDENT
106	71030	0.02694	0.00000	0.06014	0.00008835	0.99782398	DICHEDES* TRITON
107	71891	0.02379	0.01504	0.03255	0.00007803	0.99790201	PLICIFUSUS KROYERI

Table B-1.--Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
108	81355	0.02165	0.01296	0.03035	0.00007100	0.99797301	PTERASTER OBSCURUS
109	74562	0.02088	0.00805	0.03371	0.00006846	0.99804147	MUSCULUS DISCORS
110	20006	0.02006	0.00463	0.03553	0.00006586	0.99810733	SAWBACK POACHER
111	80106	0.01951	0.00000	0.05046	0.00006397	0.99817129	ORTHASTERIAS KOEHLERI
112	71500	0.01783	0.00806	0.02760	0.00005848	0.99822978	SNAIL UNIDENT
113	71772	0.01761	0.01179	0.02343	0.00005774	0.99828752	BERINGIUS BERINGII
114	68510	0.01636	0.00888	0.02383	0.00005364	0.99834116	DECORATOR CRAB
115	95000	0.01584	0.00000	0.03275	0.00005193	0.99839309	BRYOZOAN UNIDENT
116	80595	0.01521	0.00426	0.02615	0.00004986	0.99844295	LEPTASTERIAS SP
117	21725	0.01472	0.00977	0.01967	0.00004827	0.99849122	ARCTIC COD
118	42000	0.01330	0.00374	0.02286	0.00004361	0.99853483	SEA PEN UNIDENT
119	71764	0.01317	0.00491	0.02142	0.00004317	0.99857800	VOLUTOPSIUS MIDDENDORFFII
120	71681	0.01297	0.00558	0.02037	0.00004255	0.99862055	CREPIDULA GRANDIS
121	24001	0.01172	0.00000	0.02763	0.00003843	0.99865898	PRICKFISH
122	43040	0.01151	0.00431	0.01871	0.00003774	0.99869673	TEALIA SP
123	85200	0.01137	0.00304	0.01970	0.00003730	0.99873402	CUCUMARIA SP
124	71800	0.01060	0.00297	0.01823	0.00003477	0.99876879	NEPTUNEA SP
125	83320	0.01016	0.00000	0.02214	0.00003333	0.99880213	OPHIURA SARSI
126	71010	0.01003	0.00573	0.01434	0.00003291	0.99883503	NUDIBRANCH UNIDENT
127	23235	0.00995	0.00001	0.01996	0.00003275	0.99886779	CHUM SALMON
128	75285	0.00991	0.00547	0.01435	0.00003249	0.99890028	GREENLAND COCKLE
129	82740	0.00981	0.00000	0.02252	0.00003216	0.99893244	PARMA SAND DOLLAR
130	71750	0.00975	0.00000	0.02119	0.00003210	0.99896454	VOLUTOPSIUS SP
131	72063	0.00968	0.00556	0.01380	0.00003174	0.99899628	AFCRIA (LEUCOSYRINX) CIRCINATA
132	22200	0.00903	0.00350	0.01456	0.00002962	0.99902590	SNAILFISH UNIDENT
133	71765	0.00888	0.00135	0.01642	0.00002913	0.99905503	BERINGIUS SP
134	20322	0.00868	0.00089	0.01647	0.00002848	0.99908351	BERING WOLFFISH
135	72751	0.00848	0.00066	0.01631	0.00002782	0.99911133	LYRE WHELK

Table B-1.--Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
136	75111	0.00906	0.00496	0.01115	0.00002642	0.99913775	ALASKA SURF CLAM
137	74560	0.00794	0.00000	0.01848	0.00002605	0.99916380	MUSCULUS SP
138	71763	0.00786	0.00000	0.01656	0.00002585	0.99918965	VOLUTOPSIUS STEFANSSONI
139	21390	0.00777	0.00445	0.01108	0.00002547	0.99921511	SPINYHEAD SCULPIN
140	65000	0.00773	0.00118	0.01428	0.00002535	0.99924046	BARNACLE UNIDENT
141	61360	0.00747	0.00060	0.01434	0.00002451	0.99926497	DIPLOPTERASTER MULTIPES
142	74983	0.00632	0.00340	0.00923	0.00002072	0.99928568	CLINOCARDIUM CILIATUM
143	71012	0.00623	0.00043	0.01203	0.00002043	0.99930611	ORANGEPEEL NUDIBRANCH
144	91016	0.00595	0.00000	0.01553	0.00001951	0.99932562	SUBERITES FICUS
145	66611	0.00594	0.00393	0.00795	0.00001947	0.99934509	ARGIS LAR
146	66502	0.00570	0.00384	0.00757	0.00001870	0.99936379	CRANGON SP
147	24185	0.00559	0.00000	0.01460	0.00001833	0.99938213	POLAR EELPOUT
148	50000	0.00528	0.00074	0.00982	0.00001732	0.99939945	POLYCHAETE WORM UNIDENT
149	81095	0.00505	0.00127	0.00884	0.00001657	0.99941602	CROSSASTER PAPPOSUS
150	40011	0.00489	0.00077	0.00901	0.00001603	0.99943205	HYDROID UNIDENT
151	71761	0.00442	0.00208	0.00677	0.00001450	0.99944655	VOLUTOPSIUS MELONIS
152	00450	0.00427	0.00000	0.00921	0.00001400	0.99946055	STARRY SKATE
153	71580	0.00426	0.00209	0.00642	0.00001395	0.99947451	POLINICES PALLIDA
154	20320	0.00402	0.00000	0.01069	0.00001318	0.99948769	WOLF-EEL
155	00435	0.00400	0.00000	0.00943	0.00001311	0.99950080	BERING SKATE
156	74311	0.00393	0.00182	0.00605	0.00001290	0.99951370	HIATELLA ARCTICA
157	21314	0.00385	0.00193	0.00577	0.00001263	0.99952633	THREADED SCULPIN
158	66000	0.00371	0.00089	0.00653	0.00001217	0.99953850	SHRIMP UNIDENT
159	71774	0.00359	0.00041	0.00676	0.00001177	0.99955027	BERINGIUS STIMPSONI
160	69035	0.00353	0.00000	0.00850	0.00001156	0.99956183	PAGURUS SP
161	44000	0.00346	0.00000	0.00798	0.00001136	0.99957319	CORAL STONY UNIDENT
162	68040	0.00329	0.00136	0.00521	0.00001078	0.99958397	CANCER OREGONENSIS
163	65210	0.00323	0.00000	0.00859	0.00001060	0.99959457	PSOLUS SP

Table B-1.--Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
164	59900	0.00314	0.00000	0.00706	0.00001031	0.99960488	MOLGULA SP
165	22204	0.00308	0.00137	0.00480	0.00001010	0.99961498	MARBLED SNAILFISH
166	66045	0.00303	0.00214	0.00392	0.00000993	0.99962491	HUMPY SHRIMP
167	10212	0.00279	0.00104	0.00454	0.00000916	0.99963407	LIMANDA SAKHALINENSIS
168	74416	0.00278	0.00000	0.00617	0.00000912	0.99964319	YOLDIA SCISSURATA
169	75205	0.00277	0.00042	0.00513	0.00000910	0.99965228	GREAT ALASKAN TELLIN
170	71710	0.00269	0.00000	0.00612	0.00000882	0.99966111	COLUS SP
171	23805	0.00269	0.00197	0.00341	0.00000882	0.99966993	DAUBED SHANNY
172	71726	0.00262	0.00060	0.00463	0.00000858	0.99967850	COLUS SPITZBERGENSIS
173	69110	0.00248	0.00000	0.00524	0.00000812	0.99968662	ELASSOCHIRUS TENUIMANUS
174	66570	0.00237	0.00142	0.00333	0.00000778	0.99969440	ARGIS SP
175	62000	0.00234	0.00000	0.00540	0.00000769	0.99970209	ISOPOD UNIDENT
176	20061	0.00228	0.00144	0.00312	0.00000747	0.99970956	BERING POACHER
177	21455	0.00226	0.00000	0.00600	0.00000740	0.99971696	SMOOTH LUMPSUCKER
178	20050	0.00224	0.00144	0.00304	0.00000735	0.99972431	ALEUTIAN ALLIGATORFISH
179	71724	0.00222	0.00000	0.00469	0.00000729	0.99973160	COLUS ROSEUS
180	21921	0.00205	0.00000	0.00475	0.00000686	0.99973846	ATKA MACKEREL
181	60540	0.00202	0.00053	0.00350	0.00000661	0.99974507	HENRICIA SP
182	21441	0.00191	0.00097	0.00286	0.00000627	0.99975135	SPATULATE SCULPIN
183	71537	0.00185	0.00000	0.00491	0.00000618	0.99975753	NATICA RUSSA
184	56312	0.00184	0.00089	0.00279	0.00000604	0.99976357	EUNOE DEPRESSA
185	66515	0.00182	0.00111	0.00253	0.00000597	0.99976954	CRANGON COMMUNIS
186	21350	0.00180	0.00098	0.00262	0.00000591	0.99977545	TRIGLOPS SP
187	21340	0.00178	0.00000	0.00397	0.00000585	0.99978130	BLACKFIN SCULPIN
188	74120	0.00172	0.00026	0.00318	0.00000564	0.99978694	WEATHERVANE SCALLOP
189	71721	0.00167	0.00065	0.00270	0.00000549	0.99979243	COLUS HERENDEENII
190	74106	0.00166	0.00000	0.00340	0.00000545	0.99979788	CHLAMYS RUBIDA
191	00410	0.00151	0.00000	0.00401	0.00000495	0.99980283	DEEPSEA SKATE

Table B-1. --Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
192	69310	0.00149	0.00000	0.00396	0.00000489	0.99980772	GOLDEN KING CRAB
193	74435	0.00148	0.00040	0.00252	0.00000478	0.99981250	NUCULANA FOSSA
194	23055	0.00142	0.00000	0.00335	0.00000469	0.99981719	RAINBOW SMELT
195	69042	0.00137	0.00000	0.00316	0.00000449	0.99982169	PAGURUS BRANDTI
196	55030	0.00136	0.00000	0.00346	0.00000446	0.99982615	FLUSTRA SERRULATA
197	69082	0.00133	0.00000	0.00266	0.00000435	0.99983050	PAGURUS DALLI
198	79020	0.00132	0.00062	0.00203	0.00000434	0.99983484	ROSSIA PACIFICA
199	71755	0.00128	0.00000	0.00330	0.00000420	0.99983903	PYRULOFUSUS (VOLUTOPSIUS) HARPA
200	75242	0.00127	0.00017	0.00237	0.00000415	0.99984318	MACOMA CALCAREA
201	60430	0.00126	0.00000	0.00291	0.00000414	0.99984733	SANDPAPER SKATE
202	74655	0.00124	0.00026	0.00221	0.00000406	0.99985139	CYCLOCARDIA CREBRICOSTATA
203	21354	0.00122	0.00000	0.00317	0.00000401	0.99985539	SPECTACLED SCULPIN
204	21300	0.00122	0.00000	0.00317	0.00000399	0.99985938	SCULPIN UNIDENT
205	21935	0.00120	0.00000	0.00319	0.00000394	0.99986332	KELP GREENLING
206	74060	0.00120	0.00011	0.00229	0.00000394	0.99986725	HORSE MUSSEL
207	21355	0.00118	0.00053	0.00183	0.00000387	0.99987112	RIBBED SCULPIN
208	75110	0.00118	0.00000	0.00242	0.00000387	0.99987499	SPISULA SP
209	75600	0.00113	0.00000	0.00270	0.00000372	0.99987871	PODODESMUS MACROSCHISMA
210	80660	0.00105	0.00010	0.00208	0.00000357	0.99988228	PSEUDARCHASTER PARELII
211	21446	0.00106	0.00045	0.00171	0.00000354	0.99988582	ICELUS SP
212	66530	0.00104	0.00041	0.00168	0.00000342	0.99988924	CRANGON DALLI
213	65203	0.00098	0.00000	0.00214	0.00000320	0.99989244	BALANUS (CHIRONA) EVERMANNI
214	81061	0.00096	0.00000	0.00255	0.00000314	0.99989558	SOLASTER ENDECA
215	81310	0.00094	0.00000	0.00187	0.00000307	0.99989865	PTERASTER SP
216	56300	0.00090	0.00003	0.00177	0.00000295	0.99990160	SCALENORB UNIDENT
217	41100	0.00086	0.00000	0.00185	0.00000281	0.99990441	SOFT CORAL UNIDENT
218	21900	0.00079	0.00000	0.00205	0.00000258	0.99990699	GREENLING UNIDENT
219	71230	0.00078	0.00000	0.00157	0.00000255	0.99990954	SPECKLED SEA LEMON

Table B-1.--Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
220	21592	0.00077	0.00000	0.00174	0.00000253	0.99991207	PACIFIC SANDFISH
221	75264	0.00076	0.00028	0.00125	0.00000250	0.99991456	SILIQUA SP
222	20202	0.00076	0.00035	0.00117	0.00000249	0.99991706	PACIFIC SAND LANCE
223	72406	0.00066	0.00004	0.00133	0.00000223	0.99991929	TROPHON CLATHRATUS
224	21380	0.00067	0.00000	0.00172	0.00000220	0.99992149	PACIFIC STAGHORN SCULPIN
225	79000	0.00066	0.00000	0.00153	0.00000215	0.99992364	SQUID UNIDENT
226	72756	0.00065	0.00023	0.00108	0.00000214	0.99992578	BUCCINUM SOLENUM
227	59902	0.00063	0.00000	0.00129	0.00000206	0.99992784	MOLGULA GRIFITHSII
228	20060	0.00061	0.00000	0.00163	0.00000202	0.99992986	WARTY POACHER
229	74982	0.00060	0.00017	0.00103	0.00000197	0.99993182	NUTTALS COCKLE
230	72421	0.00055	0.00003	0.00107	0.00000180	0.99993363	TROPHONOPSIS (BORECTROPHON) PACIFICUS
231	71634	0.00054	0.00000	0.00115	0.00000177	0.99993539	TACHYRHYNCHUS EROSUS
232	50160	0.00053	0.00026	0.00080	0.00000173	0.99993712	SEA MOUSE UNIDENT
233	50010	0.00052	0.00004	0.00100	0.00000172	0.99993884	TUBE WORM UNIDENT
234	72541	0.00052	0.00000	0.00122	0.00000172	0.99994055	SOLARIELLA OBSCURA
235	74650	0.00049	0.00000	0.00100	0.00000161	0.99994217	CARDITA SP
236	66500	0.00049	0.00000	0.00110	0.00000159	0.99994376	CRANGONID SHRIMP UNIDENT
237	74641	0.00045	0.00000	0.00104	0.00000147	0.99994523	ASTARTE BOREALIS
238	20055	0.00044	0.00016	0.00072	0.00000145	0.99994667	SMOOTH ALLIGATORFISH
239	80729	0.00043	0.00000	0.00114	0.00000141	0.99994808	RED BAT STAR
240	41580	0.00041	0.00000	0.00088	0.00000133	0.99994942	PARAGORGIA SP
241	22205	0.00041	0.00000	0.00092	0.00000133	0.99995075	LIPARIS GIBBUS
242	41221	0.00041	0.00000	0.00096	0.00000133	0.99995208	EUNEPHTHYA (CERSEMIA) RUBIFORMIS
243	71765	0.00040	0.00000	0.00097	0.00000132	0.99995340	VOLUTOPSIUS TROPHONIUS
244	30535	0.00040	0.00000	0.00105	0.00000130	0.99995470	HARLEQUIN ROCKFISH
245	68010	0.00035	0.00000	0.00094	0.00000116	0.99995586	CANCER CRAB UNIDENT
246	71911	0.00035	0.00000	0.00094	0.00000116	0.99995703	LIOMESUS COICES
247	30040	0.00035	0.00000	0.00094	0.00000116	0.99995819	ROCKFISH UNIDENT

Table B-1.--Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
248	23808	0.00035	0.00000	0.00079	0.00000116	0.99995934	SNAKE PRICKLEBACK
249	68020	0.00034	0.00000	0.00090	0.00000111	0.99996046	DUNGENESS CRAB
250	21932	0.00033	0.00000	0.00068	0.00000110	0.99996155	WHITESPOTTED GREENLING
251	75267	0.00032	0.00000	0.00066	0.00000104	0.99996259	DALL'S RAZOR CLAM
252	75020	0.00031	0.00000	0.00084	0.00000103	0.99996362	BUTTER CLAM
253	20035	0.00031	0.00004	0.00057	0.00000100	0.99996462	GRAY STARSNOUT
254	66175	0.00030	0.00000	0.00066	0.00000098	0.99996560	EUALUS GAIMARDII BELCHERI
255	74110	0.00030	0.00000	0.00074	0.00000098	0.99996658	CHLAMYS HINDSII
256	72805	0.00029	0.00001	0.00058	0.00000097	0.99996754	VELUTINA VELUTINA
257	71770	0.00029	0.00000	0.00067	0.00000096	0.99996850	BERINGIUS KENNICOTTI
258	59111	0.00029	0.00000	0.00073	0.00000096	0.99996946	STRIPED SEA LEECH
259	79210	0.00029	0.00000	0.00076	0.00000094	0.99997040	BERRYTEUTHIS MAGISTER
260	75241	0.00028	0.00000	0.00073	0.00000091	0.99997130	COMMON MACOMA
261	74414	0.00025	0.00000	0.00068	0.00000084	0.99997214	YOLDIA SP
262	80546	0.00025	0.00000	0.00053	0.00000082	0.99997296	HENRICIA TUMIDA
263	71759	0.00025	0.00000	0.00066	0.00000082	0.99997378	VOLUTOPSIUS FILOSUS
264	22236	0.00023	0.00000	0.00055	0.00000076	0.99997454	PINK SNAILFISH
265	74333	0.00023	0.00008	0.00038	0.00000075	0.99997529	NUCULA TENUIS
266	80230	0.00023	0.00000	0.00061	0.00000075	0.99997604	PEDICELLASTER MAGISTER
267	75260	0.00021	0.00000	0.00055	0.00000068	0.99997672	BUTTER CLAM
268	71525	0.00020	0.00000	0.00047	0.00000067	0.99997739	NATICA SP
269	21352	0.00020	0.00000	0.00049	0.00000066	0.99997805	SCISSORTAIL SCULPIN
270	71725	0.00020	0.00000	0.00040	0.00000065	0.99997870	COLUS ESYCHUS
271	74080	0.00020	0.00000	0.00041	0.00000065	0.99997935	BAY MUSSEL
272	43042	0.00020	0.00001	0.00038	0.00000064	0.99998000	TEALIA CRASSICORNIS
273	80542	0.00015	0.00005	0.00033	0.00000062	0.99998061	HENRICIA SANGUINOLENTA
274	71762	0.00017	0.00000	0.00045	0.00000056	0.99998117	VOLUTOPSIUS SIMPLEX
275	74561	0.00017	0.00004	0.00030	0.00000055	0.99998172	MUSCULUS NIGER

Table B-1. --Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
276	71730	0.00016	0.00003	0.00029	0.00000053	0.99998225	COLUS APHELUS
277	66580	0.00016	0.00000	0.00035	0.00000052	0.99998277	ARGIS DENTATA
278	61064	0.00015	0.00000	0.00041	0.00000051	0.99998327	SOLASTER DAWSONI
279	66170	0.00015	0.00003	0.00027	0.00000049	0.99998377	EUALUS SP
280	20036	0.00015	0.00000	0.00030	0.00000049	0.99998426	SPINYCHEEK STARSNOUT
281	66600	0.00015	0.00000	0.00040	0.00000049	0.99998475	SCLEROCRANGON SP
282	71722	0.00015	0.00001	0.00028	0.00000048	0.99998522	COLUS PYPCLISPUS
283	20000	0.00014	0.00000	0.00037	0.00000045	0.99998568	POACHER UNIDENT
284	66165	0.00013	0.00000	0.00027	0.00000044	0.99998612	HIPPOLYTID SHRIMP UNIDENT
285	74420	0.00013	0.00003	0.00023	0.00000044	0.99998655	YOLDIA HYPERBOREA
286	50192	0.00013	0.00000	0.00035	0.00000043	0.99998698	APHRODITA NEGLIGENS
287	22232	0.00013	0.00000	0.00027	0.00000041	0.99998740	CAREPROCTUS SCOTTAE
288	75203	0.00013	0.00000	0.00029	0.00000041	0.99998781	TELLINA NUCULOIDES
289	77012	0.00012	0.00000	0.00033	0.00000041	0.99998822	DENTALIUM DALLI
290	21463	0.00012	0.00002	0.00023	0.00000041	0.99998862	PACIFIC SPINY LUMPSUCKER
291	82530	0.00012	0.00000	0.00032	0.00000040	0.99998902	ORANGE-PINK SEA URCHIN
292	69520	0.00012	0.00000	0.00031	0.00000039	0.99998941	HYAS SP
293	74440	0.00012	0.00001	0.00023	0.00000039	0.99998979	NUCULANA BUCCATA
294	72804	0.00012	0.00000	0.00031	0.00000039	0.99999018	VELUTINA PROLENGATA
295	74563	0.00012	0.00001	0.00022	0.00000038	0.99999056	MUSCULUS CLIVACEUS
296	74050	0.00012	0.00000	0.00031	0.00000038	0.99999094	MUSSEL UNIDENT
297	69010	0.00012	0.00000	0.00031	0.00000038	0.99999132	HERMIT CRAB UNIDENT
298	70100	0.00011	0.00000	0.00026	0.00000037	0.99999168	CHITON UNIDENT
299	80544	0.00011	0.00000	0.00022	0.00000035	0.99999204	HENRICIA LEVIUSCULA
300	71011	0.00011	0.00000	0.00022	0.00000035	0.99999239	ONCHIDORIS BILAMELLATA
301	66033	0.00010	0.00000	0.00027	0.00000033	0.99999272	PANDALUS TRIDENS
302	75610	0.00009	0.00000	0.00025	0.00000031	0.99999303	ROCK JINGLES UNIDENT
303	30060	0.00009	0.00000	0.00025	0.00000030	0.99999333	PACIFIC OCEAN PERCH

Table B-1.--Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
304	00401	0.00005	0.00001	0.00018	0.00000030	0.99999364	SKATE EGG CASE UNIDENT
305	74000	0.00005	0.00000	0.00020	0.00000030	0.99999393	CLAM UNIDENT
306	94000	0.00005	0.00000	0.00023	0.00000029	0.99999422	SIPUNCULID WORM UNIDENT
307	72803	0.00005	0.00000	0.00017	0.00000028	0.99999451	VELUTINA CONICA
308	92500	0.00005	0.00000	0.00023	0.00000028	0.99999479	NEMERTEAN WORM UNIDENT
309	21315	0.00005	0.00001	0.00016	0.00000028	0.99999507	ARCTIC STAGHORN SCULPIN
310	71723	0.00005	0.00000	0.00019	0.00000028	0.99999535	COLUS OMERONIUS
311	73185	0.00005	0.00000	0.00019	0.00000028	0.99999562	ADMETE LAEVIOR
312	94500	0.00005	0.00000	0.00022	0.00000027	0.99999590	ECHIUROID WORM UNIDENT
313	22201	0.00007	0.00000	0.00018	0.00000023	0.99999612	LIPARIS SP
314	61090	0.00007	0.00000	0.00018	0.00000022	0.99999635	CROSSASTER SP
315	61775	0.00005	0.00000	0.00017	0.00000021	0.99999655	CTENODISCUS SP
316	74421	0.00005	0.00000	0.00016	0.00000020	0.99999675	PORTLANDIA SP.
317	71535	0.00005	0.00000	0.00013	0.00000020	0.99999695	NATICA ALEUTICA
318	75326	0.00005	0.00000	0.00012	0.00000019	0.99999714	LIOCYMA FLUCTUSA
319	72534	0.00005	0.00000	0.00012	0.00000019	0.99999733	MARGARITES ARGENTATUS
320	10000	0.00005	0.00000	0.00015	0.00000019	0.99999751	SANDDAB UNIDENT
321	20001	0.00005	0.00000	0.00012	0.00000018	0.99999770	TUBENOSE POACHER
322	71530	0.00005	0.00000	0.00013	0.00000016	0.99999786	NATICA CLAUSA
323	97000	0.00004	0.00000	0.00010	0.00000012	0.99999798	BRACHIOPOD UNIDENT
324	75201	0.00003	0.00000	0.00009	0.00000011	0.99999809	TELLINA SP
325	50011	0.00003	0.00000	0.00009	0.00000011	0.99999820	SERPULA VERMICULARIS
326	71731	0.00003	0.00000	0.00009	0.00000011	0.99999831	COLUS HALLI
327	94900	0.00003	0.00000	0.00009	0.00000011	0.99999842	PHORONIDA WORM UNIDENT
328	65120	0.00003	0.00000	0.00009	0.00000011	0.99999853	MOLPADIA INTERMEDIA
329	74175	0.00003	0.00000	0.00008	0.00000010	0.99999863	PROPEAMUSSIUM ALASKENSIS
330	74644	0.00003	0.00000	0.00008	0.00000010	0.99999873	ASTARTE FELLANDI
331	63400	0.00003	0.00000	0.00008	0.00000010	0.99999883	OPHIOPHOLIS ACULEATA

Table B-1. --Rank order of relative abundance (kg/ha) of fish and invertebrates (cont'd).

RANK	SPECIES	MEAN CPUE (KG/HA)	90 PERCENT CONFIDENCE LIMITS		PROPORTION	CUMULATIVE PROPORTION	NAME
332	97116	0.00003	0.00000	0.00008	0.00000010	0.99999893	LAQUEUS CALIFORNIANUS
333	72103	0.00003	0.00000	0.00008	0.00000010	0.99999903	OENOPOTA HARPA
334	69315	0.00003	0.00000	0.00008	0.00000010	0.99999913	HAPALOGASTER SP
335	54030	0.00003	0.00000	0.00006	0.00000010	0.99999923	CHEILONEREIS CYCLURUS
336	74985	0.00003	0.00000	0.00008	0.00000009	0.99999932	CLINOCARDIUM CALIFORNIANUS
337	75335	0.00003	0.00000	0.00008	0.00000009	0.99999942	MYA PSEUDOARENARIA
338	74417	0.00003	0.00000	0.00008	0.00000009	0.99999951	FILE YOLDIA
339	59100	0.00003	0.00000	0.00008	0.00000009	0.99999960	LEECH UNIDENT
340	71640	0.00003	0.00000	0.00007	0.00000009	0.99999970	SLIPPER SHELL
341	74986	0.00002	0.00000	0.00006	0.00000008	0.99999977	CLINOCARDIUM FUNCANUM
342	23804	0.00002	0.00000	0.00005	0.00000007	0.99999984	ARCTIC SHANNY
343	80112	0.00002	0.00000	0.00005	0.00000006	0.99999989	LEPTASTERIAS HYLODES
344	78403	0.00002	0.00000	0.00004	0.00000005	0.99999995	OCTOPUS DOFLEINI
345	74564	0.00002	0.00000	0.00004	0.00000005	1.00000000	MUSCULUS SEMINUDUS
	TOTAL	304.94304					

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APPENDIX C

Abundance Estimates for Principal Fish Species

Appendix C contains computer printouts of abundance estimates for each of the principal eastern Bering Sea groundfish species in terms of CPUE (in kilograms per hectare and numbers per hectare), population number, and biomass (in metric tons). Confidence intervals include only sampling error and do not incorporate effects of biases from other sources. Estimates are given separately for each of the 15 geographic strata used in the analysis; estimates for each of the seven standard subareas are presented as subtotals of the component strata, and the estimates for the overall survey area are shown as the total for all strata. Strata codes correspond to subareas (illustrated in Fig. 3) as follows:

Stratum	Subarea
10	1
20	2
21	2 (Pribilof high-density area)
30	3N
32	3N (St. Matthew high-density area)
40	4N
41	4N (Pribilof high-density area)
42	4N (St. Matthew high-density area)
50	5
51	5 (St. Matthew high-density area)
60	4S
61	4S (Pribilof high-density area)
70	3S
71	3S (Pribilof high-density area)
72	3S (St. Matthew high-density area)

Other column headings are defined as follows:

Area: Area of the stratum, in square nautical miles (nmi^2).

Samples: The number of sampling units in the stratum. (One sampling unit equals the mean path width of the trawl times a distance of 1 nmi.)

Mean WT KG: Mean weight of individual fish captured in the given stratum.

Method: Code 1 indicates that weights and numbers were available available for all catch records for that species.

List of Tables

Table C-1.--CPUE, population, and biomass estimates for walleye pollock.

STANDARD TRAWL WIDTH = 16.540CCCO METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.256968492E+07	57	53	53	50	128.77034	.102830E+04	161.09229	.167818E+04
SUBTOTAL	22,950.	.256968492E+07	57	53	53	50	128.77034	.102830E+04	161.09229	.167818E+04
20*	16,030.	.179494262E+07	38	37	37	37	195.54871	.154633E+04	297.99309	.429714E+04
21*	1,720.	.192531328E+06	6	6	6	6	134.39973	.274363E+04	222.22598	.878408E+04
SUBTOTAL	17,750.	.198747795E+07	44	43	43	43	189.62495	.428996E+04	290.65360	.130812E+05
30*	12,731.	.142546450E+07	28	28	28	28	143.56086	.744695E+03	341.19600	.406696E+04
32*	1,271.	.142350928E+06	6	6	6	6	480.09893	.832474E+05	633.94944	.124374E+06
SUBTOTAL	14,002.	.156781543E+07	34	34	34	34	174.11707	.839921E+05	367.77676	.128446E+06
40*	21,612.	.241988930E+07	56	54	54	51	9.49610	.454370E+01	16.64183	.112057E+02
41*	3,115.	.348771586E+06	13	13	13	13	7.46037	.255432E+01	10.42579	.357877E+01
42*	2,009.	.224990002E+06	5	5	5	4	1.02756	.279208E+00	4.93274	.349974E+01
SUBTOTAL	26,736.	.259365139E+07	74	72	72	68	8.62247	.737723E+01	15.03763	.182842E+02
50*	4,345.	.486525370E+06	11	9	9	9	4.71391	.214695E+02	8.87637	.205225E+02
52*	2,317.	.259357449E+06	9	8	8	8	0.73300	.913346E-01	6.41461	.382441E+01
SUBTOTAL	6,662.	.745922819E+06	20	17	17	17	3.32953	.215613E+02	8.02028	.243473E+02
60*	22,793.	.255218538E+07	56	55	55	51	24.22410	.576613E+02	29.45987	.103639E+03
61*	975.	.109212363E+06	3	3	3	3	35.87453	.872015E+03	50.35782	.175581E+04
SUBTOTAL	23,769.	.266139775E+07	59	58	58	54	24.70218	.929677E+03	30.31744	.185945E+04
70*	15,921.	.189466687E+07	39	38	38	38	165.19853	.122244E+04	325.59591	.537042E+04
71*	4,231.	.473731238E+06	19	17	17	17	40.92216	.570858E+03	77.53524	.179985E+04
72*	2,446.	.273903618E+06	9	9	9	9	327.57341	.171243E+05	458.38778	.202736E+05
SUBTOTAL	23,598.	.264230172E+07	67	64	64	64	159.74929	.189176E+05	294.88711	.274438E+05
TOTAL	135,466.	.151682520E+08	355	341	341	330	98.60655	.109187E+06	163.43590	.172546E+06

Table C-1.--CPUE, population, and biomass estimates for walleye pollock (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	0.799358	.12680346BE+10	.103980432E+18	1	56.00000	95.0	.621421827E+09	.191464754E+10
SUBTOTAL	0.799358	.12680346BE+10	.103980432E+18		56.00000	95.0	.621421827E+09	.191464754E+10
20*	0.656219	.163645021E+10	.129907187E+18	1	37.00000	95.0	.907757781E+09	.236914265E+10
21*	0.604778	.131065852E+09	.305541573E+16	1	5.00000	95.0	0.	.273179973E+09
SUBTOTAL	0.652409	.176551607E+10	.132562603E+18		41.95505	95.0	.103296074E+10	.250607139E+10
30*	0.420758	.148983039E+10	.775246613E+17	1	27.00000	95.0	.918466889E+09	.206117390E+10
32*	0.757314	.276433969E+09	.236485153E+17	1	5.00000	95.0	0.	.671804245E+09
SUBTOTAL	0.473431	.176626436E+10	.101173177E+18		13.27862	95.0	.107921737E+10	.245331136E+10
40*	0.570616	.123359646E+09	.615721510E+15	1	55.00000	95.0	.735758470E+08	.173143445E+09
41*	0.713569	.111384936E+08	.408478585E+13	1	12.00000	95.0	.673454867E+07	.155424385E+08
42*	0.208313	.339960150E+07	.166232032E+13	1	4.00000	95.0	0.	.697872610E+07
SUBTOTAL	0.573393	.137897741E+09	.621468617E+15		60.67013	95.0	.880391567E+08	.187756286E+09
50*	0.531063	.132287068E+08	.455829015E+14	1	10.00000	95.0	0.	.282710734E+08
52*	0.114270	.509697236E+07	.241462305E+13	1	8.00000	95.0	.151366573E+07	.868027900E+07
SUBTOTAL	0.415139	.183256792E+08	.479975245E+14		11.27770	95.0	.307709707E+07	.335742613E+08
60*	0.822274	.230313610E+09	.633430608E+16	1	55.00000	95.0	.706354954E+08	.389991724E+09
61*	0.712392	.168467143E+08	.196505177E+15	1	2.00000	95.0	0.	.771662992E+08
SUBTOTAL	0.814785	.247160324E+09	.653081126E+16		13.41669	95.0	.726033049E+08	.421717344E+09
70*	0.507373	.188568010E+10	.180855237E+18	1	38.00000	95.0	.102743331E+10	.275192689E+10
71*	0.527788	.112514287E+09	.379012524E+16	1	18.00000	95.0	0.	.242414312E+09
72*	0.714621	.384598234E+09	.142718005E+17	1	8.00000	95.0	.109112771E+09	.660083697E+09
SUBTOTAL	0.541730	.238679262E+10	.198557163E+19		46.74551	95.0	.148814345E+10	.328544173E+10
TOTAL	0.000604	.755399147E+10	.544273652E+18		77.40918	95.0	.612267396E+10	.906530899E+10

Table C-1.--CPUE, population, and biomass estimates for walleye pollock (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.101361308E+07	.637134790E+11	56.00000	95.0	.507457321E+06	.151976884E+07
SUBTOTAL	.101361308E+07	.637134790E+11	56.00000	95.0	.507457321E+06	.151976884E+07
20*	.107518207E+07	.467471493E+11	37.00000	95.0	.636857727E+06	.151350640E+07
21*	.792657009E+05	.954332976E+09	5.00000	95.0	0.	.158689753E+06
SUBTOTAL	.115444777E+07	.477014823E+11	41.99165	95.0	.713277173E+06	.159561836E+07
30*	.626857664E+06	.141966283E+11	27.00000	95.0	.382345450E+06	.871369879E+06
32*	.209347379E+06	.158286696E+11	5.00000	95.0	0.	.532810136E+06
SUBTOTAL	.836205043E+06	.300272994E+11	7.05863	95.0	.426389699E+06	.124602139E+07
40*	.703910202E+05	.249663036E+09	55.00000	95.0	.387066084E+05	.102075432E+06
41*	.797036160E+04	.291547770E+07	12.00000	95.0	.421220473E+04	.117285185E+05
42*	.708182040E+03	.132619287E+06	4.00000	95.0	0.	.171911605E+04
SUBTOTAL	.790695638E+05	.252711133E+09	60.62920	95.0	.472757825E+05	.110863345E+06
50*	.702527713E+04	.476864387E+08	10.00000	95.0	0.	.224108132E+05
52*	.582430168E+03	.576659344E+05	8.00000	95.0	.145051498E+02	.115035519E+04
SUBTOTAL	.760770729E+04	.477441047E+08	10.02955	95.0	0.	.230025432E+05
60*	.185380947E+06	.352421286E+10	55.00000	95.0	.703391182E+05	.308422776E+06
61*	.120014718E+05	.975934716E+08	2.00000	95.0	0.	.545105542E+05
SUBTOTAL	.201382419E+06	.362180633E+10	15.15983	95.0	.731357595E+05	.325629079E+06
70*	.958772410E+06	.411762065E+11	38.00000	95.0	.547394292E+06	.137015053E+07
71*	.593636686E+05	.120211278E+10	18.00000	95.0	0.	.132228485E+06
72*	.274641876E+06	.120548546E+11	8.00000	95.0	.216555242E+05	.528028228E+06
SUBTOTAL	.129299796E+07	.544351738E+11	23.81340	95.0	.810281260E+06	.177571465E+07
TOTAL	.458532354E+07	.195797695E+12	35.14422	95.0	.368102342E+07	.548962365E+07

Table C-2. --CPUE, population, and biomass estimates for Pacific cod.

STANDARD TRAWL WIDTH = 16.5400CCOO METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.256968492E+07	57	57	57	31	28.52104	.216772E+02	22.57690	.160065E+02
SUBTOTAL	22,950.	.256968492E+07	57	57	57	31	28.52104	.216772E+02	22.57690	.160065E+02
20*	16,030.	.179494262E+07	38	38	38	23	12.92007	.352312E+01	4.42639	.490672E+00
21*	1,720.	.192533532E+06	6	6	6	6	14.47910	.159394E+02	11.12428	.301278E+02
SUBTOTAL	17,750.	.198747795E+07	44	44	44	29	13.07110	.194626E+02	5.07524	.306185E+02
30*	12,731.	.142546450E+07	28	27	27	27	35.49034	.304382E+02	12.36251	.524662E+01
32*	1,271.	.142350928E+06	6	6	6	6	73.70469	.673045E+03	55.15942	.126439E+03
SUBTOTAL	14,002.	.156781543E+07	34	33	33	33	38.95004	.703483E+03	16.24628	.131686E+03
40*	21,612.	.241988980E+07	56	51	51	48	15.97656	.420945E+01	10.18707	.246773E+01
41*	3,115.	.348771586E+06	13	13	13	12	7.87072	.432599E+01	8.16200	.422945E+01
42*	2,009.	.224990002E+06	5	4	4	2	0.25357	.377518E-01	1.39872	.139175E+01
SUBTOTAL	26,736.	.299365139E+07	74	68	68	62	13.85052	.857720E+01	9.29065	.808897E+01
50*	4,345.	.486525370E+06	11	4	4	4	3.89782	.151460E+02	4.10388	.157745E+02
52*	2,317.	.259397449E+06	9	8	8	3	0.18257	.785985E-02	0.96623	.190442E+00
SUBTOTAL	6,662.	.745922819E+06	20	12	12	7	2.60583	.151539E+02	3.01275	.159654E+02
60*	22,793.	.255218538E+07	56	56	56	38	13.70658	.338592E+01	13.61221	.609889E+01
61*	975.	.109212363E+06	3	3	3	3	7.04752	.189620E+01	7.47966	.602656E+01
SUBTOTAL	23,769.	.266139775E+07	59	59	59	41	13.43332	.528211E+01	13.36057	.121254E+02
70*	16,921.	.189466687E+07	39	37	37	34	36.71777	.403057E+02	12.64603	.282100E+01
71*	4,231.	.473731238E+06	19	19	19	18	13.90940	.784848E+01	27.09855	.757062E+02
72*	2,446.	.273903618E+06	9	9	9	9	38.89660	.756020E+02	41.49499	.129561E+03
SUBTOTAL	23,598.	.264230172E+07	67	65	65	61	32.85438	.123756E+03	18.22777	.208088E+03
TOTAL	135,466.	.151682520E+08	355	338	338	264	21.51340	.897392E+03	13.67053	.422578E+03

Table C-2 .--CPUE, population, and biomass estimates for Pacific cod (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	1.263284	.177713578E+09	.9917676955E+15	1	56.00000	95.0	.114563556E+09	.240863600E+09
SUBTOTAL	1.263284	.177713578E+09	.9917676955E+15		56.00000	95.0	.114563556E+09	.240863600E+09
20*	2.913271	.243375525E+08	.148335503E+14	1	37.00000	95.0	.165214507E+08	.321536544E+08
21*	1.301576	.656083235E+07	.104755293E+14	1	5.00000	95.0	0.	.155473277E+08
SUBTOTAL	2.575461	.306983849E+08	.253130796E+14		7.43454	95.0	.189995720E+08	.427971979E+08
30*	2.870805	.539808146E+08	.100033456E+15	1	27.00000	95.0	.334573823E+08	.745042469E+08
32*	1.336212	.240522910E+08	.240411020E+14	1	5.00000	95.0	.114462342E+08	.366583479E+08
SUBTOTAL	2.397794	.780331056E+08	.124074558E+15		15.59532	95.0	.542561609E+08	.101770050E+09
40*	1.568317	.755129634E+08	.135594417E+15	1	55.00000	95.0	.521628266E+08	.988631002E+08
41*	0.964312	.871995679E+07	.482751466E+13	1	12.00000	95.0	.388400633E+07	.135559073E+08
42*	0.181284	.963987575E+06	.661059739E+12	1	4.00000	95.0	0.	.322103048E+07
SUBTOTAL	1.450802	.851969077E+08	.141082991E+15		69.86014	95.0	.614768690E+08	.108916947E+09
50*	0.949788	.611613227E+07	.350374036E+14	1	10.00000	95.0	0.	.193041993E+08
52*	0.183951	.767759022E+06	.120239718E+12	1	8.00000	95.0	0.	.156737834E+07
SUBTOTAL	0.864932	.688389130E+07	.351576433E+14		10.08384	95.0	0.	.200945680E+08
60*	1.005933	.106418555E+09	.372758943E+15	1	55.00000	95.0	.676829837E+08	.145154121E+09
61*	0.942200	.250231423E+07	.674475342E+12	1	2.00000	95.0	0.	.603621527E+07
SUBTOTAL	1.005446	.108920869E+09	.373433419E+15		56.99018	95.0	.701508557E+08	.147650883E+09
70*	2.903503	.733944810E+08	.950214357E+14	1	38.00000	95.0	.536325756E+08	.931563663E+08
71*	0.513282	.393243023E+08	.159422007E+15	1	18.00000	95.0	.127965662E+08	.658520384E+08
72*	0.937380	.348152860E+08	.512056458E+14	1	8.00000	95.0	.127526062E+08	.568379659E+08
SUBTOTAL	1.802436	.147534069E+09	.345649089E+15		25.99083	95.0	.109235290E+09	.185832848E+09
TOTAL	0.001574	.635180806E+09	.203647847E+16		130.56027	95.0	.545628913E+09	.724532699E+09

Table C-2.--CPUE, population, and biomass estimates for Pacific cod (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.224502750E+06	.134312231E+10	56.00000	95.0	.151051559E+06	.297953940E+06
SUBTOTAL	.224502750E+06	.134312231E+10	56.00000	95.0	.151051559E+06	.297953940E+06
20*	.710381744E+05	.106507853E+09	37.00000	95.0	.501159028E+05	.919604460E+05
21*	.853942041E+04	.554430272E+07	5.00000	95.0	.248565561E+04	.145931852E+05
SUBTOTAL	.795775548E+05	.112052156E+09	36.25645	95.0	.580554439E+05	.101059746E+06
30*	.154968368E+06	.580343873E+09	27.00000	95.0	.105438655E+06	.204498081E+06
32*	.321389661E+05	.127972306E+09	5.00000	95.0	.305451359E+04	.612234226E+05
SUBTOTAL	.187107336E+06	.708316679E+09	16.54582	95.0	.130685191E+06	.243529482E+06
40*	.118428241E+06	.231296954E+09	55.00000	95.0	.879314960E+05	.148924985E+06
41*	.840876110E+04	.494221929E+07	12.00000	95.0	.356460382E+04	.132529184E+05
42*	.174755306E+03	.179315369E+05	4.00000	95.0	0.	.546485826E+03
SUBTOTAL	.127011757E+06	.236257105E+09	63.23892	95.0	.962858131E+05	.157737701E+06
50*	.580902724E+04	.336405307E+08	10.00000	95.0	0.	.197315292E+05
52*	.145068833E+03	.496250252E+04	8.00000	95.0	0.	.307515076E+03
SUBTOTAL	.595409607E+04	.336434932E+08	10.00361	95.0	0.	.188775511E+05
60*	.107156336E+06	.206944492E+09	55.00000	95.0	.782945763E+05	.136018095E+06
61*	.235767934E+04	.212218365E+06	2.00000	95.0	.375416259E+03	.433994243E+04
SUBTOTAL	.109514015E+06	.207156699E+09	56.55590	95.0	.806676861E+05	.138360344E+06
70*	.213101068E+06	.135764090E+10	38.00000	95.0	.138402810E+06	.287799327E+06
71*	.201844530E+05	.165273286E+08	18.00000	95.0	.116430860E+05	.287258200E+05
72*	.326351678E+05	.532208569E+08	8.00000	95.0	.158122922E+05	.494580435E+05
SUBTOTAL	.265520689E+06	.142738909E+10	47.65711	95.0	.189843375E+06	.341993003E+06
TOTAL	.999588238E+06	.406793953E+10	96.46367	95.0	.872792801E+06	.112638367E+07

Table C-3 .--CPUE, population, and biomass estimates for sablefish.

STANDARD TRAWL WIDTH = 16.94000000 METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.25696849 2E+07	57	1	1	0	0.00202	.409776E-05	0.00372	.138311E-04
SUBTOTAL	22,950.	.25696849 2E+07	57	1	1	0	0.00202	.409776E-05	0.00372	.138311E-04
20*	16,030.	.17949426 2E+07	38	12	12	2	1.07312	.308864E+00	0.70337	.123292E+00
21*	1,720.	.19253532 8E+06	6	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	17,750.	.19874779 5E+07	44	12	12	2	0.96916	.308864E+00	0.63523	.123292E+00
30*	12,731.	.14254645 0E+07	28	0	0	0	0.00000	0.	0.00000	0.
32*	1,271.	.14235092 8E+06	6	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	14,002.	.15678154 3E+07	34	0	0	0	0.00000	0.	0.00000	0.
40*	21,612.	.24198698 0E+07	56	0	0	0	0.00000	0.	0.00000	0.
41*	3,115.	.34877158 6E+06	13	0	0	0	0.00000	0.	0.00000	0.
42*	2,009.	.22499003 2E+06	5	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	26,736.	.29936513 9E+07	74	0	0	0	0.00000	0.	0.00000	0.
50*	4,345.	.48652537 0E+06	11	0	0	0	0.00000	0.	0.00000	0.
52*	2,317.	.25939744 9E+06	9	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	6,662.	.74592281 9E+06	20	0	0	0	0.00000	0.	0.00000	0.
60*	22,793.	.25521853 8E+07	56	0	0	0	0.00000	0.	0.00000	0.
61*	975.	.10921236 3E+06	3	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	23,769.	.26613977 5E+07	59	0	0	0	0.00000	0.	0.00000	0.
70*	16,921.	.18946668 7E+07	39	5	5	1	0.57026	.730731E-01	0.28611	.173559E-01
71*	4,231.	.47373123 8E+06	19	0	0	0	0.00000	0.	0.00000	0.
72*	2,446.	.27390361 8E+06	9	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	23,598.	.26423017 2E+07	67	5	5	1	0.40890	.730731E-01	0.20516	.173559E-01
TOTAL	135,466.	.15168252 0E+08	355	18	18	3	0.19856	.381941E+00	0.11960	.140662E+00

Table C-3 .--CPUE, population, and biomass estimates for sablefish (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	0.544309	.292741504E+05	.856975883E+09	1	56.00000	95.0	0.	.879761406E+05
SUBTOTAL	0.544309	.292741504E+05	.856975883E+09		56.00000	95.0	0.	.879761406E+05
20*	1.525681	.386731594E+07	.372725329E+13	1	37.00000	95.0	0.	.778124071E+07
21*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	1.525681	.386731594E+07	.372725329E+13		37.00000	95.0	0.	.778124071E+07
30*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
32*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.000000	0.	0.		0.00000	95.0	0.	0.
40*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
41*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
42*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.000000	0.	0.		0.00000	95.0	0.	0.
50*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
52*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.000000	0.	0.		0.00000	95.0	0.	0.
60*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
61*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.000000	0.	0.		0.00000	95.0	0.	0.
70*	1.993127	.166052492E+07	.584610088E+12	1	38.00000	95.0	.110455412E+06	.321059443E+07
71*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
72*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	1.993127	.166052492E+07	.584610088E+12		38.00000	95.0	.110455412E+06	.321059443E+07
TOTAL	0.001650	.559711501E+07	.431272035E+13		48.09266	95.0	.137753044E+07	.973669958E+07

Table C-3.--CPUE, population, and biomass estimates for sablefish (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.159341842E+02	.253898226E+03	56.00000	95.0	0.	.47886207 1E+02
SUBTOTAL	.159341842E+02	.253898226E+03	56.00000	95.0	0.	.47886207 1E+02
20*	.590029217E+04	.933730093E+07	37.00000	95.0	0.	.120951123E+05
21*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	.590029217E+04	.933730093E+07	37.00000	95.0	0.	.120951123E+05
30*	0.	0.	0.00000	95.0	0.	0.
32*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	0.	0.	0.00000	95.0	0.	0.
40*	0.	0.	0.00000	95.0	0.	0.
41*	0.	0.	0.00000	95.0	0.	0.
42*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	0.	0.	0.00000	95.0	0.	0.
50*	0.	0.	0.00000	95.0	0.	0.
52*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	0.	0.	0.00000	95.0	0.	0.
60*	0.	0.	0.00000	95.0	0.	0.
61*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	0.	0.	0.00000	95.0	0.	0.
70*	.330963675E+04	.246136720E+07	38.00000	95.0	.132352109E+03	.648692139E+04
71*	0.	0.	0.00000	95.0	0.	0.
72*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	.330963675E+04	.246136720E+07	38.00000	95.0	.132352109E+03	.648692139E+04
TOTAL	.922598311E+04	.117989221E+08	54.92141	95.0	.233431107E+04	.161174151E+05

Table C-4.--CPUE, population, and biomass estimates for yellowfin sole.

STANDARD TRAWL WIDTH = 16.34000000 METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.256968492E+07	57	57	57	57	132.81460	.298661E+03	590.73068	.609341E+04
SUBTOTAL	22,950.	.256968492E+07	57	57	57	57	132.81460	.298661E+03	590.73068	.609341E+04
20*	16,030.	.179454252E+07	38	18	18	16	16.16598	.223311E+02	52.54711	.361831E+03
21*	1,720.	.192535328E+06	6	6	6	5	15.40799	.537522E+02	44.11255	.458407E+03
SUBTOTAL	17,750.	.198747795E+07	44	24	24	21	16.09255	.760833E+02	51.73002	.820237E+03
30*	12,731.	.142546450E+07	28	0	0	0	0.00000	0.	0.00000	0.
32*	1,271.	.142350928E+06	6	5	5	4	0.32915	.607661E-02	0.93368	.575874E-01
SUBTOTAL	14,002.	.156781543E+07	34	5	5	4	0.02989	.607661E-02	0.08477	.575874E-01
40*	21,612.	.241988980E+07	56	56	56	56	109.41991	.133564E+03	498.99656	.327649E+04
41*	3,115.	.348771586E+06	13	13	13	13	99.12858	.245641E+03	356.71149	.297206E+04
42*	2,009.	.224950002E+06	5	5	5	5	11.53410	.823595E+01	35.54672	.722958E+02
SUBTOTAL	26,736.	.299365139E+07	74	74	74	74	100.86430	.387440E+03	447.58891	.632079E+04
50*	4,345.	.486525370E+06	11	10	10	10	0.27530	.708914E-02	0.88011	.621748E-01
52*	2,317.	.259397449E+06	9	8	8	8	11.97314	.112925E+02	36.19155	.106814E+03
SUBTOTAL	6,662.	.745922819E+06	20	18	18	18	4.34327	.112596E+02	13.15980	.106876E+03
60*	22,793.	.255218538E+07	56	56	56	55	151.32822	.202035E+03	730.00275	.470502E+04
61*	975.	.109212363E+06	3	3	3	3	46.92395	.142986E+03	160.60246	.207517E+04
SUBTOTAL	23,769.	.266139775E+07	59	59	59	58	147.04391	.345020E+03	706.63700	.678019E+04
70*	16,921.	.189466687E+07	39	17	17	14	3.75739	.245209E+01	10.59335	.219445E+02
71*	4,231.	.473731238E+06	19	18	18	18	37.71870	.132016E+03	130.80767	.218692E+04
72*	2,446.	.273903618E+06	9	7	7	7	13.76018	.434015E+02	38.81028	.348255E+03
SUBTOTAL	23,598.	.264230172E+07	67	42	42	39	10.88312	.177869E+03	35.07125	.255711E+04
TOTAL	135,466.	.151682520E+08	355	279	279	271	72.42947	.129638E+04	325.94324	.226787E+05

Table C-4 .--CPUE, population, and biomass estimates for yellowfin sole (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	0.224831	.464992441E+10	.377548831E+18	1	56.00000	95.0	.341779842E+10	.588205040E+10
SUBTOTAL	0.224831	.464992441E+10	.377548831E+18		56.00000	95.0	.341779842E+10	.588205040E+10
20*	0.307647	.288913840E+09	.109385421E+17	1	37.00000	95.0	.768886315E+08	.500949049E+09
21*	0.349238	.260165138E+08	.155450102E+15	1	5.00000	95.0	0.	.610700521E+08
SUBTOTAL	0.311087	.314935354E+09	.110979922E+17		41.52787	95.0	.102139665E+09	.527731044E+09
30*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
32*	0.352527	.407130860E+06	.109496712E+11	1	5.00000	95.0	.138099680E+06	.676162040E+06
SUBTOTAL	0.352527	.407130860E+06	.109496712E+11		5.00000	95.0	.138099680E+06	.676162040E+06
40*	0.219280	.365887476E+10	.190033190E+18	1	55.00000	95.0	.284604080E+10	.454970871E+10
41*	0.277897	.381096255E+09	.339222340E+16	1	12.00000	95.0	.254185200E+09	.508007310E+09
42*	0.324477	.244584843E+08	.343393782E+14	1	4.00000	95.0	.823117681E+07	.407657917E+08
SUBTOTAL	0.225350	.410446950E+10	.183459753E+18		62.64534	95.0	.324811100E+10	.496082799E+10
50*	0.312798	.131165714E+07	.138095186E+12	1	10.00000	95.0	.463706477E+06	.213960780E+07
52*	0.330827	.287573855E+08	.674352844E+14	1	8.00000	95.0	.982018490E+07	.476945861E+08
SUBTOTAL	0.330040	.300690426E+08	.675773796E+14		8.02681	95.0	.111124631E+08	.490256221E+08
60*	0.207298	.570707000E+10	.287566850E+18	1	55.00000	95.0	.463118641E+10	.678295359E+10
61*	0.292175	.537279768E+08	.232246876E+15	1	2.00000	95.0	0.	.119304183E+09
SUBTOTAL	0.208090	.576079798E+10	.287799097E+18		56.31883	95.0	.468560660E+10	.683598935E+10
70*	0.354693	.614812611E+09	.739168861E+15	1	38.00000	95.0	.636371780E+07	.116598804E+09
71*	0.288352	.185819897E+09	.460520544E+16	1	18.00000	95.0	.466317861E+08	.333009008E+09
72*	0.354550	.325627506E+08	.245157877E+15	1	8.00000	95.0	0.	.695927812E+08
SUBTOTAL	0.310315	.283863905E+09	.558953213E+16		24.73996	95.0	.129552718E+09	.438175100E+09
TOTAL	0.000222	.151444673E+11	.865562844E+18		173.17650	95.0	.133023921E+11	.169865426E+11

Table C-4.--CPUE, population, and biomass estimates for yellowfin sole (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.104544741E+07	.185051152E+11	56.00000	95.0	.772809055E+06	.131808577E+07
SUBTOTAL	.104544741E+07	.185051152E+11	56.00000	95.0	.772809055E+06	.131808577E+07
20*	.888851492E+05	.675093470E+09	37.00000	95.0	.362107035E+05	.141559595E+06
21*	.906726096E+04	.186969122E+08	5.00000	95.0	0.	.202042460E+05
SUBTOTAL	.979724102E+05	.693790382E+09	41.63836	95.0	.447671273E+05	.151177693E+06
30*	0.	0.	0.00000	95.0	0.	0.
32*	.143524680E+03	.115540761E+04	5.00000	95.0	.561330804E+02	.230916279E+03
SUBTOTAL	.143524680E+03	.115540761E+04	5.00000	95.0	.561330804E+02	.230916279E+03
40*	.811088876E+06	.733891718E+10	55.00000	95.0	.639304161E+06	.982873591E+06
41*	.105905427E+06	.280372400E+09	12.00000	95.0	.694195445E+05	.142391310E+06
42*	.794920191E+04	.391196666E+07	4.00000	95.0	.245636955E+04	.134397669E+05
SUBTOTAL	.924943505E+06	.762320155E+10	67.00830	95.0	.750525336E+06	.109936167E+07
50*	.410284196E+03	.157455343E+05	10.00000	95.0	.130712059E+03	.689856334E+03
52*	.951371528E+04	.712974982E+07	8.00000	95.0	.335632831E+04	.156711023E+05
SUBTOTAL	.992399948E+04	.714549535E+07	8.02892	95.0	.375961719E+04	.160381813E+05
60*	.118306504E+07	.123462049E+11	55.00000	95.0	.960120010E+06	.140601006E+07
61*	.156979461E+05	.160025371E+08	2.00000	95.0	0.	.325113107E+05
SUBTOTAL	.119876298E+07	.123642075E+11	56.77943	95.0	.975907050E+06	.142161892E+07
70*	.218069975E+05	.625952793E+08	38.00000	95.0	.338250079E+04	.402314942E+05
71*	.547350177E+05	.277958594E+09	18.00000	95.0	.155543761E+05	.899156593E+05
72*	.115451171E+05	.305529611E+08	8.00000	95.0	0.	.246175915E+05
SUBTOTAL	.887871323E+05	.391146835E+09	30.16545	95.0	.477016152E+05	.128472649E+06
TOTAL	.336523097E+07	.395846081E+11	176.22360	95.0	.297134935E+07	.375921258E+07

Table C-5 .--CPUE, population, and biomass estimates for rock sole.

STANDARD TRAWL WIDTH = 16.54000000 METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.25696849 2E+07	57	57	57	47	74.17839	.841472E+02	410.34210	.380207E+04
SUBTOTAL	22,950.	.25696849 2E+07	57	57	57	47	74.17839	.841472E+02	410.34210	.380207E+04
20*	16,030.	.17945426 2E+07	38	26	26	11	9.93378	.805162E+01	40.35234	.189975E+03
21*	1,720.	.19253528E+06	6	6	6	5	10.50116	.997674E+02	63.55960	.866971E+03
SUBTOTAL	17,750.	.19874779 5E+07	44	32	32	16	10.76374	.107819E+03	42.60052	.105885E+04
30*	12,731.	.14254645 0E+07	23	15	15	1	0.23969	.828208E-02	0.54561	.200986E-01
32*	1,271.	.14235092 8E+06	6	6	6	0	1.81238	.496464E+00	5.46101	.246347E+01
SUBTOTAL	14,002.	.15678154 3E+07	34	21	21	1	0.38249	.504746E+00	0.99191	.248357E+01
40*	21,612.	.24198893 0E+07	56	55	55	27	5.33499	.105856E+01	67.61151	.236049E+03
41*	3,115.	.34877158 6E+06	13	13	13	12	11.11386	.846275E+01	48.52196	.203974E+03
42*	2,009.	.22499002 2E+06	5	5	5	0	0.13396	.106959E-02	2.17557	.350511E+00
SUBTOTAL	26,736.	.29936513 9E+07	74	73	73	39	5.61736	.952238E+01	60.46962	.440374E+03
50*	4,345.	.48652537 0E+06	11	5	5	0	0.22438	.408333E-01	1.14063	.967416E+00
52*	2,317.	.25939744 9E+06	9	8	8	1	0.10092	.988458E-03	2.68095	.555735E+00
SUBTOTAL	6,662.	.74592281 9E+06	20	13	13	1	0.18145	.418217E-01	1.67628	.152315E+01
60*	22,793.	.25521853 8E+07	56	54	54	35	18.59333	.119970E+02	136.53073	.514675E+03
61*	975.	.10921236 3E+06	3	3	3	3	43.66262	.335333E+02	266.21241	.545052E+03
SUBTOTAL	23,769.	.26613977 5E+07	59	57	57	38	19.62207	.455303E+02	141.85231	.105973E+04
70*	16,921.	.18946663 7E+07	39	36	36	11	2.95081	.340958E+00	6.42229	.157819E+01
71*	4,231.	.47373123 8E+06	19	19	19	18	57.00185	.529813E+03	255.69699	.102216E+05
72*	2,446.	.27390361 8E+06	9	9	9	3	5.10275	.366817E+01	15.55191	.258477E+02
SUBTOTAL	23,598.	.26423017 2E+07	67	64	64	32	12.86455	.533822E+03	52.06047	.102491E+05
TOTAL	135,466.	.15168252 0E+08	355	317	317	174	20.81804	.781366E+03	121.17632	.166141E+05

Table C-5.--CPUE, population, and biomass estimates for rock sole (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	0.180772	.322999943E+10	.235576869E+18	1	56.00000	95.0	.225672605E+10	.420327282E+10
SUBTOTAL	0.180772	.322999943E+10	.235576869E+18		56.00000	95.0	.225672605E+10	.420327282E+10
20*	0.246176	.221868555E+09	.574014165E+16	1	37.00000	95.0	.682727602E+08	.375464349E+09
21*	0.291084	.374859130E+08	.302258810E+15	1	5.00000	95.0	0.	.321842700E+08
SUBTOTAL	0.252667	.259354468E+09	.604240046E+16		36.09054	95.0	.101603363E+09	.417105572E+09
30*	0.439308	.238242214E+07	.383205880E+12	1	27.00000	95.0	.110968360E+07	.365516067E+07
32*	0.331876	.238127770E+07	.468404415E+12	1	5.00000	95.0	.621683316E+06	.414087208E+07
SUBTOTAL	0.385605	.476369983E+07	.851610295E+12		6.36767	95.0	.250554134E+07	.702185833E+07
40*	0.073906	.501176823E+09	.129701834E+17	1	55.00000	95.0	.272607491E+09	.729550154E+09
41*	0.229048	.518389193E+08	.232814970E+15	1	12.00000	95.0	.185911370E+08	.850867016E+08
42*	0.061585	.149936041E+07	.166437433E+12	1	4.00000	95.0	.366692700E+06	.263206813E+07
SUBTOTAL	0.092696	.554517123E+09	.132031649E+17		62.14834	95.0	.324783675E+09	.784250570E+09
50*	0.196717	.165991145E+07	.214870705E+13	1	10.00000	95.0	0.	.496581826E+07
52*	0.037645	.213025414E+07	.350374493E+12	1	8.00000	95.0	.729354422E+06	.353115385E+07
SUBTOTAL	0.108244	.383016559E+07	.249958155E+13		13.70748	95.0	.415191551E+06	.724513962E+07
60*	0.136184	.106738017E+10	.314565290E+17	1	55.00000	95.0	.711543030E+09	.142321731E+10
61*	0.164014	.895897476E+08	.610006190E+14	1	2.00000	95.0	.554510727E+08	.122666422E+09
SUBTOTAL	0.133327	.115643892E+10	.315175296E+17		56.99996	95.0	.800629741E+09	.151224809E+10
70*	0.459464	.372734268E+08	.531590479E+14	1	38.00000	95.0	.225076426E+08	.520392110E+08
71*	0.222927	.371051432E+09	.215247412E+17	1	18.00000	95.0	.628071548E+08	.679295708E+09
72*	0.329111	.130484198E+08	.181957959E+14	1	8.00000	95.0	.321182284E+07	.228350168E+08
SUBTOTAL	0.247108	.421373278E+09	.215960960E+17		18.10758	95.0	.112618507E+09	.730128049E+09
TOTAL	0.000172	.563027708E+10	.307939411E+18		103.33820	95.0	.452838520E+10	.673216896E+10

Table C-5.--CPUE, population, and biomass estimates for rock sole (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.583893634E+06	.521377585E+10	56.00000	95.0	.439101588E+06	.728685679E+06
SUBTOTAL	.583893634E+06	.521377585E+10	56.00000	95.0	.439101588E+06	.728685679E+06
20*	.546187407E+05	.243409437E+09	37.00000	95.0	.229896485E+05	.862478329E+05
21*	.109115339E+05	.347026361E+08	5.00000	95.0	0.	.260570233E+05
SUBTOTAL	.655302746E+05	.278112074E+09	19.05016	95.0	.306259572E+05	.100434592E+06
30*	.104661713E+04	.157502333E+06	27.00000	95.0	.229610404E+03	.186362386E+04
32*	.790289081E+03	.943976867E+05	5.00000	95.0	.369731568E+00	.158020843E+04
SUBTOTAL	.183690622E+04	.252306019E+06	9.01257	95.0	.700701974E+03	.297311046E+04
40*	.395462551E+05	.581645094E+08	55.00000	95.0	.242450756E+05	.548474345E+05
41*	.118736042E+05	.965932579E+07	12.00000	95.0	.510139072E+04	.186458176E+05
42*	.923883732E+02	.508038864E+03	4.00000	95.0	.206174972E+02	.164060259E+03
SUBTOTAL	.515121981E+05	.678243432E+08	48.37935	95.0	.349373229E+05	.680370733E+05
50*	.334401057E+03	.906939034E+05	10.00000	95.0	0.	.100537280E+04
52*	.801924236E+02	.624083572E+03	8.00000	95.0	.225647048E+02	.137800142E+03
SUBTOTAL	.414593481E+03	.913179860E+05	10.16802	95.0	0.	.107869381E+04
60*	.145360328E+06	.733248230E+09	55.00000	95.0	.910326197E+05	.195683036E+06
61*	.146069025E+05	.375295105E+07	2.00000	95.0	.627090077E+04	.229429042E+05
SUBTOTAL	.159967230E+06	.737001131E+09	52.76612	95.0	.105443658E+06	.214490803E+06
70*	.171257860E+05	.114847050E+08	38.00000	95.0	.102554506E+05	.239961215E+05
71*	.827175074E+05	.111567934E+10	18.00000	95.0	.125403383E+05	.152894577E+06
72*	.428132795E+04	.258225151E+07	8.00000	95.0	.575727651E+03	.798692825E+04
SUBTOTAL	.104124621E+06	.112574680E+10	18.35700	95.0	.335064266E+05	.174742816E+06
TOTAL	.967279458E+06	.742680387E+10	90.95284	95.0	.795783435E+06	.113877548E+07

Table C-6.--CPUE, population, and biomass estimates for flathead sole and Bering flounder.

STANDARD TRAWL WIDTH = 16.54000000 METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.25696849 2E+07	57	50	50	25	7.85299	.113464E+01	32.97541	.191562E+02
SUBTOTAL	22,950.	.25696849 2E+07	57	50	50	25	7.85299	.113464E+01	32.97541	.191562E+02
20*	16,030.	.17949426 2E+07	38	38	38	32	21.19741	.758928E+01	137.94577	.287323E+03
21*	1,720.	.19253532 8E+06	6	6	6	5	6.52635	.336155E+01	29.61309	.870713E+02
SUBTOTAL	17,750.	.15874779 5E+07	44	44	44	37	19.77617	.109508E+02	127.45113	.374394E+03
30*	12,731.	.14254645 0E+07	28	28	28	14	11.89182	.233326E+02	38.73577	.176383E+03
32*	1,271.	.14235092 8E+06	6	5	5	3	7.81437	.731889E+01	23.02433	.662704E+02
SUBTOTAL	14,002.	.15678154 3E+07	34	33	33	17	11.52160	.306515E+02	37.30924	.242654E+03
40*	21,612.	.24198859 0E+07	56	44	44	16	1.13521	.358411E-01	8.05514	.259693E+01
41*	3,115.	.34877158 6E+06	13	13	13	10	1.68611	.876564E-01	14.45937	.777559E+01
42*	2,009.	.22499000 2E+06	5	5	5	4	2.23120	.543615E+00	8.61901	.544770E+01
SUBTOTAL	26,736.	.29936513 9E+07	74	62	62	30	1.28178	.667113E+00	8.84364	.158202E+02
50*	4,345.	.48652537 0E+06	11	11	11	7	2.61848	.195340E+01	12.96132	.331805E+02
52*	2,317.	.25939744 9E+06	9	7	7	3	0.87162	.217377E+00	3.49335	.307324E+01
SUBTOTAL	6,662.	.74592281 9E+06	20	18	18	10	2.01100	.217078E+01	9.66880	.362542E+02
60*	22,793.	.25521853 8E+07	56	43	43	12	2.61257	.337307E+00	15.98127	.113569E+02
61*	975.	.10921236 3E+06	3	3	3	3	3.60905	.459358E+00	17.20487	.711178E+01
SUBTOTAL	23,769.	.26613977 5E+07	59	46	46	15	2.65346	.796665E+00	16.03148	.184687E+02
70*	16,921.	.18946687 E+07	39	37	37	22	8.11405	.139528E+01	57.16115	.122102E+03
71*	4,231.	.47373123 8E+06	19	17	17	15	6.78356	.264035E+01	51.56289	.203555E+03
72*	2,446.	.27390361 8E+06	9	9	9	3	10.01455	.220180E+02	36.57307	.296025E+03
SUBTOTAL	23,598.	.26423017 2E+07	67	63	63	40	8.07252	.260537E+02	54.02327	.626686E+03
TOTAL	135,466.	.15168252 0E+08	355	316	316	174	7.33620	.724252E+02	40.58712	.133343E+04

Table C-6.--CPUE, population, and biomass estimates for flathead sole and Bering flounder (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	0.238147	.255565265E+09	.118692442E+16	1	56.00000	95.0	.190480854E+09	.328649676E+09
SUBTOTAL	0.238147	.255565265E+09	.118692442E+16		56.00000	95.0	.190480854E+09	.328649676E+09
20*	0.153665	.758464810E+09	.868609186E+16	1	37.00000	95.0	.569522061E+09	.947407559E+09
21*	0.220389	.174650845E+08	.302864922E+14	1	5.00000	95.0	.218787794E+07	.327422910E+08
SUBTOTAL	0.155167	.775529894E+09	.871637835E+16		38.51320	95.0	.586854091E+09	.965005698E+09
30*	0.306998	.165139526E+09	.336296944E+16	1	27.00000	95.0	.499097931E+08	.288369259E+09
32*	0.339396	.100397718E+08	.126036556E+14	1	5.00000	95.0	.913389675E+06	.191661539E+08
SUBTOTAL	0.308814	.175179298E+09	.337557010E+16		27.90640	95.0	.599588024E+08	.298399793E+09
40*	0.140529	.597097726E+08	.142693564E+15	1	55.00000	95.0	.357561768E+08	.836633685E+08
41*	0.115610	.154478060E+08	.887500577E+13	1	12.00000	95.0	.895635846E+07	.219392536E+08
42*	0.252870	.554014415E+07	.258757183E+13	1	4.00000	95.0	.147468965E+07	.104055987E+08
SUBTOTAL	0.144936	.810977228E+08	.154156142E+15		62.76562	95.0	.562740737E+08	.105921372E+09
50*	0.202022	.193166276E+08	.736974923E+14	1	10.00000	95.0	.189861801E+08	.384433937E+08
52*	0.249510	.277577313E+07	.194035662E+13	1	8.00000	95.0	0.	.598795467E+07
SUBTOTAL	0.207989	.220924009E+08	.756378495E+14		10.64017	95.0	.271547569E+07	.414693221E+08
60*	0.163477	.124939572E+09	.694126463E+15	1	55.00000	95.0	.720610303E+08	.177798113E+09
61*	0.209769	.575572174E+07	.795929715E+12	1	2.00000	95.0	.191680488E+07	.955463859E+07
SUBTOTAL	0.165516	.130695293E+09	.694922392E+15		56.66575	95.0	.778618142E+08	.183528773E+09
70*	0.141951	.331749522E+09	.411285018E+16	1	38.00000	95.0	.201735718E+09	.461763326E+09
71*	0.131559	.746248388E+08	.435175631E+15	1	18.00000	95.0	.307551953E+08	.118854482E+09
72*	0.273823	.306856722E+08	.208392483E+15	1	8.00000	95.0	0.	.648263524E+08
SUBTOTAL	0.149427	.437260033E+09	.476041830E+16		55.12442	95.0	.259196018E+09	.575324043E+09
TOTAL	0.000181	.188581991E+10	.189640076E+17		129.13701	95.0	.161315513E+10	.215848469E+10

Table C-6.--CPUE, population, and biomass estimates- for flathead- sole and Bering flounder (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.61E146593E+05	.703023993E+08	56.00000	95.0	.450013347E+05	.786279840E+05
SUBTOTAL	.61E146593E+05	.703023993E+08	56.00000	95.0	.450013347E+05	.786279840E+05
20*	.116549352E+06	.229432279E+09	37.00000	95.0	.858417942E+05	.147256910E+06
21*	.384910684E+04	.116926485E+07	5.00000	95.0	.847347230E+03	.685086644E+04
SUBTOTAL	.120398459E+06	.230601543E+09	39.12540	95.0	.896765318E+05	.151120386E+06
30*	.519255519E+05	.444866287E+09	27.00000	95.0	.856070098E+04	.952904029E+05
32*	.340745945E+04	.139161347E+07	5.00000	95.0	.374536428E+03	.644038247E+04
SUBTOTAL	.553330114E+05	.446257901E+09	27.76210	95.0	.119848865E+05	.986811362E+05
40*	.841486058E+04	.196936202E+07	55.00000	95.0	.560081386E+04	.112289073E+05
41*	.180137163E+04	.100050448E+06	12.00000	95.0	.111213755E+04	.249060571E+04
42*	.153772466E+04	.258208675E+06	4.00000	95.0	.127121422E+03	.294832790E+04
SUBTOTAL	.117539569E+05	.232762114E+07	12.96661	95.0	.842955608E+04	.150783577E+05
50*	.350239056E+04	.433865065E+07	10.00000	95.0	0.	.861400714E+04
52*	.692582269E+03	.137245617E+06	8.00000	95.0	0.	.154687861E+04
SUBTOTAL	.459497283E+04	.447589527E+07	10.76808	95.0	0.	.930859961E+04
60*	.204247245E+05	.206159148E+08	55.00000	95.0	.113151691E+05	.295342798E+05
61*	.120737260E+04	.514100645E+05	2.00000	95.0	0.	.408830425E+04
SUBTOTAL	.216320973E+05	.206673249E+08	56.85191	95.0	.125207376E+05	.307434569E+05
70*	.470920140E+05	.469980131E+08	38.00000	95.0	.332082358E+05	.609757923E+05
71*	.984386987E+04	.556004112E+07	18.00000	95.0	.488576652E+04	.147979731E+05
72*	.840244147E+04	.154998295E+08	8.00000	95.0	0.	.174811226E+05
SUBTOTAL	.653383254E+05	.680578837E+08	25.05996	95.0	.483439017E+05	.823327490E+05
TOTAL	.340865482E+06	.842690569E+09	70.93821	95.0	.282903580E+06	.398826984E+06

Table C-7.--CPUE, population, and biomass estimates for Alaska plaice.

STANDARD TRAWL WIDTH = 16.54000000 METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.256968492E+07	57	47	47	11	9.19698	.360400E+01	16.28256	.852701E+01
SUBTOTAL	22,950.	.256968492E+07	57	47	47	11	9.19698	.360400E+01	16.28256	.852701E+01
20*	16,030.	.179454262E+07	38	14	14	0	3.23018	.248118E+01	6.01930	.127615E+02
21*	1,720.	.192535328E+06	6	5	5	2	1.19547	.179904E+00	1.48093	.387526E+00
SUBTOTAL	17,750.	.198747795E+07	44	19	19	2	3.03307	.266103E+01	5.57965	.131490E+02
30*	12,731.	.142546450E+07	28	3	3	0	0.04983	.776172E-03	0.04674	.674298E-03
32*	1,271.	.142350928E+06	6	5	5	0	0.52185	.794337E-01	0.53723	.106709E+00
SUBTOTAL	14,002.	.156781543E+07	34	8	8	0	0.09269	.802098E-01	0.09128	.107333E+00
40*	21,612.	.241988980E+07	56	56	56	53	46.01885	.153278E+03	92.52100	.509918E+03
41*	3,115.	.348771536E+06	13	13	13	13	33.80124	.501870E+02	57.85387	.109630E+03
42*	2,009.	.224950002E+06	5	5	5	5	10.98622	.511797E+01	15.62065	.878276E+01
SUBTOTAL	26,736.	.299365139E+07	74	74	74	71	41.96255	.208583E+03	82.70265	.628330E+03
50*	4,345.	.486525370E+06	11	10	10	7	12.09047	.931036E+02	10.81338	.582815E+02
52*	2,317.	.259397449E+06	9	8	8	7	20.20389	.483224E+02	30.35879	.123021E+03
SUBTOTAL	6,662.	.745922819E+06	20	18	18	14	14.91194	.141426E+03	17.61069	.181302E+03
60*	22,793.	.255218538E+07	56	56	56	37	20.77885	.679196E+01	41.14656	.248445E+02
61*	975.	.109212363E+06	3	3	3	0	2.25061	.283997E+00	3.83295	.141486E+01
SUBTOTAL	23,769.	.266139775E+07	59	59	59	37	20.01853	.707595E+01	39.61537	.262558E+02
70*	16,921.	.189466687E+07	39	21	21	7	5.77149	.426158E+01	5.96066	.538900E+01
71*	4,231.	.473731236E+06	19	15	15	8	8.66984	.796544E+01	14.11342	.254835E+02
72*	2,446.	.273903618E+06	9	9	9	1	8.80546	.179718E+02	9.45676	.172014E+02
SUBTOTAL	23,598.	.264230172E+07	67	45	45	16	6.60563	.301986E+02	7.76475	.480738E+02
TOTAL	135,466.	.151682520E+08	355	270	270	151	15.64337	.393629E+03	28.99442	.905745E+03

Table C-7.--CPUE, population, and biomass estimates for Alaska plaice (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	0.564836	.128167874E+09	.528335299E+15	1	56.00000	95.0	.820761088E+08	.174259639E+09
SUBTOTAL	0.564836	.128167874E+09	.528335299E+15		56.00000	95.0	.820761088E+08	.174259639E+09
20*	0.536637	.330958236E+08	.385794707E+15	1	37.00000	95.0	0.	.729153560E+08
21*	0.807241	.873414825E+06	.134755247E+12	1	5.00000	95.0	0.	.189260857E+07
SUBTOTAL	0.543595	.339692386E+08	.385929503E+15		37.16258	95.0	0.	.737957266E+08
30*	1.066090	.204093352E+06	.128563460E+11	1	27.00000	95.0	0.	.436761071E+06
32*	0.971381	.234258949E+06	.202895725E+11	1	5.00000	95.0	0.	.600475969E+06
SUBTOTAL	1.015477	.438352301E+06	.331459185E+11		6.42804	95.0	0.	.883853624E+06
40*	0.497388	.605823586E+09	.280184607E+17	1	55.00000	95.0	.350170487E+09	.102147668E+10
41*	0.564252	.616087548E+08	.125130482E+15	1	12.00000	95.0	.374340824E+08	.861834273E+08
42*	0.703314	.107656140E+08	.417167442E+13	1	4.00000	95.0	.509572357E+07	.164355044E+08
SUBTOTAL	0.507391	.758397555E+09	.281477629E+17		57.22441	95.0	.422323569E+09	.109447234E+10
50*	1.118052	.161162270E+08	.129447694E+15	1	10.00000	95.0	0.	.414653154E+08
52*	0.665504	.241227431E+08	.776717093E+14	1	8.00000	95.0	.379560659E+07	.444458796E+08
SUBTOTAL	0.846755	.402389701E+08	.207119404E+15		17.96681	95.0	.987260225E+07	.706053380E+08
60*	0.504996	.321678640E+09	.151850236E+16	1	55.00000	95.0	.243497210E+09	.399860070E+09
61*	0.587174	.128227505E+07	.158346721E+12	1	2.00000	95.0	0.	.299455932E+07
SUBTOTAL	0.505322	.322960915E+09	.151866071E+16		55.20857	95.0	.244816328E+09	.401105503E+09
70*	0.968263	.345942198E+08	.181520876E+15	1	36.00000	95.0	.728047104E+07	.619079686E+08
71*	0.614298	.204805084E+08	.536630873E+14	1	18.00000	95.0	.502368358E+07	.359373332E+08
72*	0.931128	.793444990E+07	.121090926E+14	1	8.00000	95.0	0.	.159588967E+08
SUBTOTAL	0.848534	.630091781E+08	.247293057E+15		62.81909	95.0	.315685533E+08	.944498029E+08
TOTAL	0.000540	.134718248E+10	.310351340E+17		74.78822	95.0	.995668771E+09	.165869619E+10

Table C-7.--CPUE, population, and biomass estimates for Alaska plaice (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.723938117E+05	.223304453E+09	56.00000	95.0	.424286092E+05	.102359014E+06
SUBTOTAL	.723938117E+05	.223304453E+09	56.00000	95.0	.424286092E+05	.102359014E+06
20*	.177604481E+05	.750088465E+08	37.00000	95.0	.184292069E+03	.353366041E+05
21*	.705056645E+03	.625769727E+05	5.00000	95.0	.619109734E+02	.134820232E+04
SUBTOTAL	.184655049E+05	.750714235E+08	37.38430	95.0	.900213881E+03	.360307956E+05
30*	.217581958E+03	.147967064E+05	27.00000	95.0	0.	.467694221E+03
32*	.227554630E+03	.151035214E+05	5.00000	95.0	0.	.543521236E+03
SUBTOTAL	.445136589E+03	.299022278E+05	7.26075	95.0	.361746241E+02	.854098552E+03
40*	.341120508E+06	.842219041E+10	55.00000	95.0	.157093717E+06	.525147293E+06
41*	.361118525E+05	.572830324E+08	12.00000	95.0	.196200101E+05	.526037750E+05
42*	.757160759E+04	.243095538E+07	4.00000	95.0	.324340126E+04	.118998139E+05
SUBTOTAL	.384804008E+06	.848190439E+10	58.39849	95.0	.200416093E+06	.565191922E+06
50*	.180187773E+05	.206790365E+09	10.00000	95.0	0.	.500578794E+05
52*	.160537719E+05	.305093140E+08	8.00000	95.0	.299063836E+04	.291169054E+05
SUBTOTAL	.340725492E+05	.237299679E+09	13.38749	95.0	.798754955E+03	.673463434E+05
60*	.162446420E+06	.415118774E+09	55.00000	95.0	.121569133E+06	.203323706E+05
61*	.752518932E+03	.317841173E+05	2.00000	95.0	0.	.152006210E+04
SUBTOTAL	.163199336E+06	.415150558E+09	55.15423	95.0	.122341881E+06	.204056796E+06
70*	.334963197E+05	.143545516E+09	38.00000	95.0	.920714070E+04	.577054989E+05
71*	.125811321E+05	.167736290E+08	18.00000	95.0	.397635608E+04	.211859081E+05
72*	.736799014E+04	.126513090E+08	8.00000	95.0	0.	.155901274E+05
SUBTOTAL	.534654420E+05	.172970454E+09	55.08794	95.0	.270527484E+05	.798381355E+05
TOTAL	.726845790E+06	.960573086E+10	85.71534	95.0	.531644870E+06	.922046711E+06

Table C-8 .--CPUE, population, and biomass estimates for Greenland turbot.

STANDARD TRAWL WIDTH = 16.54000000 METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.25696849 2E+07	57	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	22,950.	.25696849 2E+07	57	0	0	0	0.00000	0.	0.00000	0.
20*	16,030.	.17949426 2E+07	38	2	2	0	0.16216	.219170E-01	0.03475	.836297E-03
21*	1,720.	.19253528E+06	6	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	17,750.	.19874779 5E+07	44	2	2	0	0.14645	.219170E-01	0.03138	.836297E-03
30*	12,731.	.14254645 0E+07	28	24	24	18	2.93924	.215990E+00	3.99338	.444033E+00
32*	1,271.	.14235092 8E+06	6	4	4	3	0.66956	.558348E-01	0.82903	.980596E-01
SUBTOTAL	14,002.	.15678154 3E+07	34	28	28	21	2.73316	.271825E+00	3.70607	.542092E+00
40*	21,612.	.24198893 0E+07	56	2	2	1	0.02018	.223219E-03	0.02652	.350491E-03
41*	3,115.	.34877158 6E+06	13	1	1	0	0.00963	.926562E-04	0.01768	.312740E-03
42*	2,009.	.22499002 E+06	5	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	26,736.	.29336513 9E+07	74	3	3	1	0.01743	.315875E-03	0.02350	.663231E-03
50*	4,345.	.48652537 0E+06	11	1	1	1	0.04428	.196084E-02	0.07810	.609950E-02
52*	2,317.	.25939744 9E+06	9	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	6,662.	.74592281 9E+06	20	1	1	1	0.02888	.196084E-02	0.05094	.609950E-02
60*	22,793.	.25521853 8E+07	56	1	1	0	0.00149	.222191E-05	0.00411	.168740E-04
61*	975.	.10921236 3E+06	3	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	23,769.	.26613977 5E+07	59	1	1	0	0.00143	.222191E-05	0.00394	.168740E-04
70*	16,921.	.18946668 7E+07	39	17	17	1	0.47643	.155181E-01	0.46506	.136421E-01
71*	4,231.	.47373123 8E+06	19	1	1	1	0.04157	.172769E-02	0.05727	.328018E-02
72*	2,446.	.27390361 8E+06	9	7	7	2	0.97740	.202522E+00	1.29304	.282017E+00
SUBTOTAL	23,598.	.26423017 2E+07	67	25	25	4	0.45035	.219768E+00	0.47778	.298939E+00
TOTAL	135,466.	.15168252 0E+08	355	60	60	27	0.38526	.515789E+00	0.47824	.843647E+00

Table C-8.--CPUE, population, and biomass estimates for Greenland turbot (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.000000	0.	0.		0.00000	95.0	0.	0.
20*	4.667052	.191043924E+06	.252821896E+11	1	37.00000	95.0	0.	.513922208E+06
21*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	4.667052	.191043924E+06	.252821896E+11		37.00000	95.0	0.	.513922208E+06
30*	0.736028	.174370821E+08	.846605536E+13	1	27.00000	95.0	.114548445E+08	.234193198E+08
32*	0.807642	.361500863E+06	.126449425E+11	1	5.00000	95.0	.104398506E+05	.718361875E+06
SUBTOTAL	0.737432	.177985930E+08	.846470030E+13		27.54213	95.0	.118214130E+08	.237757530E+08
40*	0.760816	.196604186E+06	.192584164E+11	1	55.00000	95.0	0.	.474882146E+06
41*	0.544309	.188933687E+05	.356959390E+09	1	12.00000	95.0	0.	.600620190E+05
42*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.741836	.215497554E+06	.196153758E+11		62.31276	95.0	0.	.495513990E+06
50*	0.566589	.116393629E+06	.135474769E+11	1	10.00000	95.0	0.	.379676018E+06
52*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.566589	.116393629E+06	.135474769E+11		10.00000	95.0	0.	.379676018E+06
60*	0.362873	.321142748E+05	.103132665E+10	1	55.00000	95.0	0.	.965114244E+05
61*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.362873	.321142748E+05	.103132665E+10		55.00000	95.0	0.	.965114244E+05
70*	1.024435	.269911306E+07	.459514145E+12	1	38.00000	95.0	.132485763E+07	.407336849E+07
71*	0.725745	.831107434E+05	.690739563E+10	1	18.00000	95.0	0.	.257726415E+06
72*	0.755893	.101489102E+07	.198528598E+12	1	8.00000	95.0	.574170227E+05	.211236502E+07
SUBTOTAL	0.942678	.361711403E+07	.664950139E+12		18.14340	95.0	.215366541E+07	.558036425E+07
TOTAL	0.000806	.222207472E+08	.920912681E+13		33.86529	95.0	.160431014E+08	.283983930E+08

Table C-8.--CPUE, population, and biomass estimates for Greenland turbot (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	0.	0.	0.00000	95.0	0.	0.
20*	.891611916E+03	.662576241E+06	37.00000	95.0	0.	.254180951E+04
21*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	.891611916E+03	.662576241E+06	37.00000	95.0	0.	.254180951E+04
30*	.126341798E+05	.411912372E+07	27.00000	95.0	-.867002324E+04	.169983364E+05
32*	.251963333E+03	.106164352E+05	5.00000	95.0	-.270575542E+02	.556869112E+03
SUBTOTAL	.131261432E+05	.412374016E+07	27.63196	95.0	-.855662247E+04	.172956638E+05
40*	.145579911E+03	.122652013E+05	55.00000	95.0	0.	.371774364E+03
41*	.102833310E+02	.105757181E+03	12.00000	95.0	0.	.326922989E+02
42*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	.159863742E+03	.123709584E+05	58.78589	95.0	0.	.382546935E+03
50*	.659938568E+02	.435518913E+04	10.00000	95.0	0.	.213028170E+03
52*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	.659938568E+02	.435518913E+04	10.00000	95.0	0.	.213028170E+03
60*	.116533930E+02	.135801569E+03	55.00000	95.0	0.	.350335954E+02
61*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	.116533930E+02	.135801569E+03	55.00000	95.0	0.	.350335954E+02
70*	.276506502E+04	.522705134E+06	38.00000	95.0	-.129936058E+04	.423076946E+04
71*	.603172367E+02	.363819904E+04	18.00000	95.0	0.	.187043751E+03
72*	.820061449E+03	.142567858E+06	8.00000	95.0	0.	.169076460E+04
SUBTOTAL	.364544371E+04	.666911161E+06	24.00337	95.0	-.195736025E+04	.533352717E+04
TOTAL	.179007098E+05	.547708951E+07	45.56142	95.0	-.131832133E+05	.226182063E+05

Table C-9.--CPUE, population, and biomass estimates for arrowtooth and Kamchatka flounder.

STANDARD TRAWL WIDTH = 16.54000000 METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.25696849 2E+07	57	15	15	0	0.22845	.802012E-02	0.66306	.713478E-01
SUBTOTAL	22,950.	.25696849 2E+07	57	15	15	0	0.22845	.802012E-02	0.66306	.713478E-01
20*	16,030.	.17949426 2E+07	38	37	37	29	19.31581	.126945E+02	57.25003	.113630E+03
21*	1,720.	.19253528E+06	6	6	6	6	7.11150	.180106E+01	41.05122	.380786E+02
SUBTOTAL	17,750.	.19874779 5E+07	44	43	43	35	18.13353	.144956E+02	55.68078	.151668E+03
30*	12,731.	.14254645 0E+07	28	25	25	16	4.16597	.109032E+01	5.57092	.196831E+01
32*	1,271.	.14235092 8E+06	6	1	1	0	0.13340	.177963E-01	0.14705	.216243E-01
SUBTOTAL	14,002.	.15678154 3E+07	34	26	26	16	3.79983	.110812E+01	5.07846	.198933E+01
40*	21,612.	.24198899 0E+07	56	0	0	0	0.00000	0.	0.00000	0.
41*	3,115.	.34877158 6E+06	13	3	3	0	0.02093	.371338E-03	0.46150	.180435E+00
42*	2,009.	.22499000 2E+06	5	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	26,736.	.25936513 9E+07	74	3	3	0	0.00244	.371338E-03	0.05377	.190435E+00
50*	4,345.	.48652537 0E+06	11	0	0	0	0.00000	0.	0.00000	0.
52*	2,317.	.25939744 9E+06	9	0	0	0	0.00000	0.	0.00000	0.
SUBTOTAL	6,662.	.74592281 5E+06	20	0	0	0	0.00000	0.	0.00000	0.
60*	22,793.	.25521855 8E+07	56	5	5	1	0.14750	.132995E-01	0.67232	.196267E+00
61*	975.	.10921236 3E+06	3	3	3	2	2.17762	.154197E+01	14.56827	.785386E+02
SUBTOTAL	23,769.	.26613977 5E+07	59	8	8	3	0.23080	.195527E+01	1.24255	.787348E+02
70*	16,921.	.18946668 7E+07	35	35	35	21	7.81347	.244001E+01	24.61355	.228845E+02
71*	4,231.	.47373123 8E+06	19	19	19	13	3.42075	.538441E+00	21.33411	.351422E+02
72*	2,446.	.27390361 8E+06	9	2	2	0	0.25810	.630635E-01	0.28130	.599497E-01
SUBTOTAL	23,598.	.26423017 2E+07	67	56	56	34	6.24271	.304152E+01	21.50329	.580870E+02
TOTAL	135,466.	.15168252 0E+08	355	151	151	88	3.93593	.206089E+02	11.90752	.290732E+03

Table C-9 .--CPUE, population, and biomass estimates for arrowtooth and Kamchatka flounder (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	0.344540	.521929137E+07	.442072409E+13	1	56.00000	95.0	.100535704E+07	.943322569E+07
SUBTOTAL	0.344540	.521929137E+07	.442072409E+13		56.00000	95.0	.100535704E+07	.943322569E+07
20*	0.337394	.314776842E+09	.343515173E+16	1	37.00000	95.0	.195956449E+09	.433597236E+09
21*	0.173235	.242110119E+08	.132311832E+14	1	5.00000	95.0	.141133971E+08	.343086268E+08
SUBTOTAL	0.325669	.338887854E+09	.344838297E+16		38.65695	95.0	.220062168E+09	.457913540E+09
30*	0.747807	.243253903E+08	.375283371E+14	1	27.00000	95.0	.117547610E+08	.368960195E+08
32*	0.907132	.641220395E+05	.411163595E+10	1	5.00000	95.0	0.	.228979803E+06
SUBTOTAL	0.748226	.243895123E+08	.375324487E+14		27.02758	95.0	.118181945E+08	.369608301E+08
40*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
41*	0.045359	.493047687E+06	.206004322E+12	1	12.00000	95.0	0.	.148204565E+07
42*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.045359	.493047687E+06	.206004322E+12		12.00000	95.0	0.	.148204565E+07
50*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
52*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
SUBTOTAL	0.000000	0.	0.		0.00000	95.0	0.	0.
60*	0.219384	.525607628E+07	.119956746E+14	1	55.00000	95.0	0.	.122012140E+08
61*	0.149477	.487367307E+07	.678981117E+13	1	2.00000	95.0	0.	.425439336E+08
SUBTOTAL	0.185750	.101297494E+08	.207854859E+14		2.30268	95.0	0.	.297476005E+08
70*	0.317446	.142851085E+09	.770844655E+15	1	38.00000	95.0	.866232517E+08	.199078919E+09
71*	0.160342	.309587209E+08	.740023865E+14	1	18.00000	95.0	.128075219E+08	.491099199E+08
72*	0.917527	.238016723E+06	.422022574E+11	1	8.00000	95.0	0.	.709742639E+06
SUBTOTAL	0.290314	.174045823E+09	.844889243E+15		50.34620	95.0	.115606662E+09	.232484983E+09
TOTAL	0.000331	.553265278E+09	.435621687E+16		61.53774	95.0	.421283992E+09	.685246563E+09

Table C-9 .--CPUE, population, and biomass estimates for arrow-tooth and Kamchatka flounder (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.175825435E+04	.496928337E+06	56.00000	95.0	.384690581E+03	.321181813E+04
SUBTOTAL	.175825435E+04	.496928337E+06	56.00000	95.0	.384690581E+03	.321181813E+04
20*	.106203809E+06	.383765569E+09	37.00000	95.0	.664889262E+05	.145918692E+06
21*	.415419062E+04	.626471927E+06	5.00000	95.0	.215924465E+04	.622913660E+04
SUBTOTAL	.110398000E+06	.384396040E+09	37.73916	95.0	.706507144E+05	.150145285E+06
30*	.181906851E+05	.207884323E+08	27.00000	95.0	.883472795E+04	.275466423E+05
32*	.561703411E+02	.338378853E+04	5.00000	95.0	0.	.207726288E+03
SUBTOTAL	.182488555E+05	.207918161E+08	27.04095	95.0	.889213687E+04	.276055741E+05
40*	0.	0.	0.00000	95.0	0.	0.
41*	.223641920E+02	.423842894E+03	12.00000	95.0	0.	.672242348E+02
42*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	.223641920E+02	.423842894E+03	12.00000	95.0	0.	.672242348E+02
50*	0.	0.	0.00000	95.0	0.	0.
52*	0.	0.	0.00000	95.0	0.	0.
SUBTOTAL	0.	0.	0.00000	95.0	0.	0.
60*	.115309749E+04	.812852296E+06	55.00000	95.0	0.	.296099724E+04
61*	.726502062E+03	.217339556E+06	2.00000	95.0	0.	.665199996E+04
SUBTOTAL	.188159555E+04	.103019185E+07	2.87752	95.0	0.	.624907429E+04
70*	.453474740E+05	.821884266E+08	38.00000	95.0	.269874497E+05	.637074983E+05
71*	.456397950E+04	.113384903E+07	18.00000	95.0	.272678534E+04	.720117367E+04
72*	.216551659E+03	.443945204E+05	8.00000	95.0	0.	.702426026E+03
SUBTOTAL	.505280051E+05	.833666701E+08	40.29648	95.0	.320751938E+05	.689808165E+05
TOTAL	.182877079E+06	.490082071E+09	60.23644	95.0	.138601484E+06	.227152673E+06

Table C-10.--CPUE, population, and biomass estimates for Pacific halibut.

STANDARD TRAWL WIDTH = 16.540000000 METERS

STRATUM	AREA SQ. MI.	SAMPLES	TOTAL HAULS	HAULS WITH CATCH	HAULS WITH NUMS.	HAULS WITH L-F	CPUE KG/HA	VARIANCE CPUE KG/HA	CPUE NO/HA	VARIANCE CPUE NO/HA
10*	22,950.	.256968492E+07	57	52	52	52	4.05478	.502238E+00	1.72314	.896714E-01
SUBTOTAL	22,950.	.256968492E+07	57	52	52	52	4.05478	.502238E+00	1.72314	.896714E-01
20*	16,030.	.179494262E+07	38	29	29	28	3.73234	.855969E+00	1.03695	.693189E-01
21*	1,720.	.192535326E+06	6	3	3	3	0.37200	.346306E-01	0.22356	.192241E-01
SUBTOTAL	17,750.	.198747795E+07	44	32	32	31	3.40681	.890600E+00	0.95816	.885430E-01
30*	12,731.	.142546450E+07	28	5	5	5	0.38562	.698048E-01	0.06218	.864359E-03
32*	1,271.	.142350926E+06	6	6	6	6	4.08443	.860326E+01	0.53982	.397779E-01
SUBTOTAL	14,002.	.156781543E+07	34	11	11	11	0.72145	.867306E+01	0.10555	.406423E-01
40*	21,612.	.241986980E+07	56	24	24	24	0.60372	.264167E-01	0.26953	.503065E-02
41*	3,115.	.349771536E+06	13	5	5	5	0.37501	.561718E-01	0.11668	.212038E-02
42*	2,009.	.224950002E+06	5	2	2	2	0.05291	.106838E-02	0.08953	.301002E-02
SUBTOTAL	26,736.	.299365139E+07	74	31	31	31	0.53568	.836573E-01	0.23820	.102111E-01
50*	4,345.	.486525370E+06	11	0	0	0	0.00000	0.	0.00000	0.
52*	2,317.	.259397449E+06	9	5	5	5	0.10587	.138026E-02	0.17138	.480155E-02
SUBTOTAL	6,662.	.745922819E+06	20	5	5	5	0.03682	.138026E-02	0.05960	.480155E-02
60*	22,793.	.255218538E+07	56	19	19	19	0.90948	.862378E-01	0.36264	.114586E-01
61*	975.	.109212363E+06	3	1	1	1	0.40326	.162619E+00	0.21337	.455265E-01
SUBTOTAL	23,769.	.266139775E+07	59	20	20	20	0.88871	.248856E+00	0.35651	.569851E-01
70*	16,921.	.189466687E+07	39	28	28	27	2.01160	.243722E+00	0.61606	.177810E-01
71*	4,231.	.473731238E+06	19	13	13	13	6.26302	.157862E+02	3.18776	.269999E+01
72*	2,446.	.273903618E+06	9	6	6	6	1.04748	.199933E+00	0.63489	.535117E-01
SUBTOTAL	23,598.	.264230172E+07	67	47	47	46	2.57388	.162299E+02	1.07908	.277129E+01
TOTAL	135,466.	.151682520E+08	355	198	198	196	1.93714	.266296E+02	0.72885	.306214E+01

Table C-10.--CPUE, population, and biomass estimates for Pacific halibut (cont'd).

STRATUM	MEAN WT KG	POPULATION	VARIANCE POPULATION	METHOD USED	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - POPULATION PERCENT	LOWER	UPPER
10*	2.353133	.135636721E+08	.555605906E+13	1	56.00000	95.0	.883703840E+07	.182903059E+08
SUBTOTAL	2.353133	.135636721E+08	.555605906E+13		56.00000	95.0	.883703840E+07	.182903059E+08
20*	3.599327	.570146993E+07	.209558652E+13	1	37.00000	95.0	.276672191E+07	.863621794E+07
21*	1.663972	.131850197E+06	.668683498E+10	1	5.00000	95.0	0.	.342088758E+06
SUBTOTAL	3.555582	.583332012E+07	.210227335E+13		38.39455	95.0	.289693841E+07	.876970184E+07
30*	6.201155	.271529057E+06	.164901109E+11	1	27.00000	95.0	.810379531E+04	.534954319E+06
32*	7.566258	.235389379E+06	.756337392E+10	1	5.00000	95.0	.117955242E+05	.458983233E+06
SUBTOTAL	6.835045	.506918436E+06	.240434647E+11		10.34168	95.0	.161445610E+06	.852391262E+06
40*	2.239851	.199795606E+07	.279166726E+12	1	55.00000	95.0	.938457543E+06	.305745457E+07
41*	3.213953	.124658158E+06	.242019006E+10	1	12.00000	95.0	.163790222E+05	.232937293E+06
42*	0.590525	.617065425E+05	.142971239E+10	1	4.00000	95.0	0.	.166871371E+06
SUBTOTAL	2.249870	.218432076E+07	.283016629E+12		62.67479	95.0	.112068927E+07	.324795224E+07
50*	0.000000	0.	0.	1	0.00000	95.0	0.	0.
52*	0.617707	.136180100E+06	.303156012E+10	1	8.00000	95.0	.921265030E+04	.263147549E+06
SUBTOTAL	0.617707	.136180100E+06	.303156012E+10		8.00000	95.0	.921265030E+04	.263147549E+06
60*	2.507956	.283507085E+07	.700340056E+12	1	55.00000	95.0	.115607217E+07	.451406954E+07
61*	1.889562	.713606297E+05	.509519430E+10	1	2.00000	95.0	0.	.378531479E+06
SUBTOTAL	2.492778	.290645148E+07	.705435251E+12		47.07640	95.0	.121518296E+07	.459772000E+07
70*	3.265266	.357545671E+07	.598929886E+12	1	38.00000	95.0	.200651788E+07	.514439554E+07
71*	1.964713	.462587070E+07	.568564316E+13	1	18.00000	95.0	0.	.965707349E+07
72*	1.649868	.532683767E+06	.376701379E+11	1	8.00000	95.0	.851169214E+05	.980250613E+06
SUBTOTAL	2.477920	.873401117E+07	.632224313E+13		20.39340	95.0	.348655791E+07	.139790644E+08
TOTAL	0.002658	.338643742E+08	.149961025E+14		46.63768	95.0	.260629885E+08	.416667600E+08

Table C-10.--CPUE, population, and biomass estimates for Pacific halibut (cont'd).

STRATUM	BIOMASS MT	VARIANCE BIOMASS	EFF. DEG. FREEDOM	CONFIDENCE LIMITS - BIOMASS PERCENT	LOWER	UPPER
10*	.315171249E+05	.311187392E+08	56.00000	95.0	.207310036E+05	.431032461E+05
SUBTOTAL	.315171249E+05	.311187392E+08	56.00000	95.0	.207310036E+05	.431032461E+05
20*	.205214538E+05	.258768941E+08	37.00000	95.0	.101980306E+05	.308448770E+05
21*	.219394991E+03	.120457660E+05	5.00000	95.0	0.	.501570430E+03
SUBTOTAL	.207408488E+05	.258889399E+08	37.21605	95.0	.104257081E+05	.310559894E+05
30*	.168379371E+04	.133091610E+07	27.00000	95.0	0.	.405570682E+04
32*	.178101676E+04	.163562360E+07	5.00000	95.0	0.	.533150183E+04
SUBTOTAL	.346481047E+04	.296674170E+07	6.95683	95.0	0.	.767958005E+04
40*	.447514435E+04	.145151990E+07	55.00000	95.0	.205923840E+04	.689105029E+04
41*	.400645416E+03	.641140773E+05	12.00000	95.0	0.	.957955294E+03
42*	.364639083E+02	.507663643E+03	4.00000	95.0	0.	.990110535E+02
SUBTOTAL	.451225367E+04	.151614164E+07	67.26002	95.0	.245249268E+04	.737201467E+04
50*	0.	0.	0.00000	95.0	0.	0.
52*	.941193900E+02	.871454849E+03	8.00000	95.0	.160453151E+02	.152193465E+03
SUBTOTAL	.941193900E+02	.871454849E+03	8.00000	95.0	.160453151E+02	.152193465E+03
60*	.711023258E+04	.527078222E+07	55.00000	95.0	.250654270E+04	.117139225E+05
61*	.134906669E+03	.181558094E+05	2.00000	95.0	0.	.715410068E+03
SUBTOTAL	.724513925E+04	.528899203E+07	55.92881	95.0	.263350803E+04	.118567705E+05
70*	.116748165E+05	.820945111E+07	38.00000	95.0	.566616820E+04	.174834643E+05
71*	.908650892E+04	.332425640E+08	18.00000	95.0	0.	.212021112E+05
72*	.878857783E+03	.140744768E+06	8.00000	95.0	.137396143E+02	.174397595E+04
SUBTOTAL	.216421832E+05	.415927598E+08	22.79332	95.0	.826644925E+04	.350179171E+05
TOTAL	.900064796E+05	.108373176E+09	65.44079	95.0	.692033424E+05	.110809617E+06

APPENDIX D

Population Estimates by Sex and Size Groups for Principal Fish Species

Appendix D presents estimates of the numbers of individuals within the overall survey area by sex and size group for principal species of fish.

List of Tables

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Table D-l. --Population estimates **by sex and size group for walleye pollock.**

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
80.0	0.	0.	.226323647E+06	.226323647E+06	0.00003	0.00003
90.0	0.	0.	.155241259E+07	.155241259E+07	0.00020	0.00023
100.0	.278301187E+06	.923966096E+05	.172836975E+08	.176543953E+08	0.00232	0.00256
110.0	.173463587E+07	.654787356E+06	.539292110E+08	.563186342E+08	0.00742	0.00998
120.0	.579907071E+07	.343305200E+07	.543213200E+08	.635534727E+08	0.00837	0.01834
130.0	.870561517E+07	.440466797E+07	.513319564E+08	.644422416E+08	0.00849	0.02683
140.0	.768264304E+07	.368555281E+07	.412254360E+08	.525976319E+08	0.00693	0.03376
150.0	.595895486E+07	.582485308E+07	.344579751E+08	.462417930E+08	0.00609	0.03985
160.0	.747236316E+07	.482538301E+07	.337022023E+08	.459999484E+08	0.00606	0.04590
170.0	.771094660E+07	.595650225E+07	.234695366E+08	.371349854E+08	0.00489	0.05079
180.0	.695821025E+07	.657623424E+07	.158120833E+08	.293465278E+08	0.00386	0.05466
190.0	.664632362E+07	.566438196E+07	.118933685E+08	.242040741E+08	0.00319	0.05785
200.0	.581860159E+07	.677224161E+07	.520288822E+07	.177937314E+08	0.00234	0.06019
210.0	.638713686E+07	.651111592E+07	.386461914E+07	.167626719E+08	0.00221	0.06240
220.0	.967773202E+07	.921903113E+07	.537005363E+07	.232668668E+08	0.00306	0.06546
230.0	.687642139E+07	.845397631E+07	.186686251E+07	.171972602E+08	0.00226	0.06772
240.0	.751531571E+07	.119478102E+08	.914347975E+06	.202774738E+08	0.00267	0.07039
250.0	.152304659E+08	.107023776E+08	.237831375E+06	.261706744E+08	0.00345	0.07384
260.0	.115128440E+08	.902147401E+07	.237831375E+06	.207721494E+08	0.00274	0.07658
270.0	.123660165E+08	.993273883E+07	0.	.222987558E+08	0.00294	0.07951
280.0	.119833941E+08	.108598776E+08	0.	.228732718E+08	0.00301	0.08252
290.0	.866159140E+07	.106221981E+08	0.	.192837895E+08	0.00254	0.08506
300.0	.370777918E+07	.690067771E+07	0.	.176084569E+08	0.00232	0.08738
310.0	.115264539E+08	.664439956E+07	0.	.181708425E+08	0.00239	0.08978
320.0	.130291403E+08	.120108492E+08	0.	.250399896E+08	0.00330	0.09307
330.0	.291261081E+08	.188746397E+08	0.	.480007478E+08	0.00632	0.09939
340.0	.517150275E+08	.420231274E+08	0.	.937381549E+08	0.01234	0.11174
350.0	.727758063E+08	.673304935E+08	0.	.140106300E+09	0.01845	0.13019
360.0	.141097257E+09	.879089170E+08	0.	.229006174E+09	0.03016	0.16034
370.0	.156864640E+09	.132322332E+09	0.	.289186972E+09	0.03808	0.19842
380.0	.192585336E+09	.150306268E+09	0.	.343295626E+09	0.04521	0.24363
390.0	.196929012E+09	.141978532E+09	0.	.338907543E+09	0.04463	0.28826
400.0	.190910663E+09	.165316852E+09	0.	.356227545E+09	0.04691	0.33517
410.0	.202658352E+09	.143440661E+09	0.	.346099012E+09	0.04558	0.38074
420.0	.193116090E+09	.165698738E+09	0.	.359014828E+09	0.04728	0.42802
430.0	.231451417E+09	.154834915E+09	0.	.386286332E+09	0.05087	0.47889
440.0	.265361447E+09	.198165437E+09	0.	.463526884E+09	0.06104	0.53993
450.0	.268838579E+09	.210262273E+09	0.	.479100851E+09	0.06309	0.60301
460.0	.272426778E+09	.243964667E+09	0.	.516391445E+09	0.06800	0.67101
470.0	.215059305E+09	.243734388E+09	0.	.458793697E+09	0.06042	0.73143
480.0	.182117934E+09	.242110134E+09	0.	.424228068E+09	0.05586	0.78729
490.0	.140336591E+09	.216780481E+09	0.	.357117072E+09	0.04703	0.83432
500.0	.104089466E+09	.195294821E+09	0.	.299384286E+09	0.03942	0.87374
510.0	.927660735E+08	.135557673E+09	0.	.228323746E+09	0.03007	0.90381

Table D-1.--Population estimates by sex and size group for walleye pollock (cont'd).

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
520.0	.522245556E+08	.128682279E+09	0.	.180907238E+09	0.02382	0.92763
530.0	.416453623E+08	.784854383E+08	0.	.120130801E+09	0.01582	0.94345
540.0	.298030987E+08	.676250629E+08	0.	.974291616E+08	0.01283	0.95628
550.0	.163511223E+08	.483502368E+08	0.	.646513591E+08	0.00854	0.96482
560.0	.145839655E+08	.389850028E+08	0.	.534689723E+08	0.00704	0.97186
570.0	.108195934E+08	.316902618E+08	0.	.425098552E+08	0.00560	0.97746
580.0	.910656221E+07	.161346174E+08	0.	.252411802E+08	0.00332	0.98078
590.0	.791173535E+07	.164504320E+08	0.	.243622174E+08	0.00321	0.98399
600.0	.655296862E+07	.135730635E+08	0.	.201260321E+08	0.00265	0.98664
610.0	.523555995E+07	.122207673E+08	0.	.174563278E+08	0.00230	0.98894
620.0	.334344981E+07	.897160629E+07	0.	.123150561E+08	0.00162	0.99056
630.0	.386628340E+07	.819979086E+07	0.	.120660743E+08	0.00159	0.99215
640.0	.343497328E+07	.658206163E+07	0.	.100170349E+08	0.00132	0.99347
650.0	.369289268E+07	.649185266E+07	0.	.101847853E+08	0.00134	0.99481
660.0	.209881605E+07	.547965170E+07	0.	.757846774E+07	0.00100	0.99581
670.0	.164530827E+07	.457266181E+07	0.	.621797007E+07	0.00082	0.99663
680.0	.146935286E+07	.442446070E+07	0.	.589381350E+07	0.00078	0.99740
690.0	.738278444E+06	.346542485E+07	0.	.420370329E+07	0.00055	0.99796
700.0	.198807645E+07	.482075543E+07	0.	.680883188E+07	0.00090	0.99885
710.0	.620215190E+05	.274866770E+07	0.	.281068922E+07	0.00037	0.99923
720.0	.161286536E+06	.114307420E+07	0.	.130436274E+07	0.00017	0.99940
730.0	.677311357E+05	.156690019E+07	0.	.165463132E+07	0.00022	0.99961
740.0	.307900588E+05	.941815177E+06	0.	.972605236E+06	0.00013	0.99974
750.0	0.	.569610272E+06	0.	.569610272E+06	0.00008	0.99982
760.0	0.	.582232106E+06	0.	.582232106E+06	0.00008	0.99989
770.0	0.	.431972335E+06	0.	.431972335E+06	0.00006	0.99995
780.0	0.	.155305287E+06	0.	.155305287E+06	0.00002	0.99997
790.0	0.	.105669471E+06	0.	.105669471E+06	0.00001	0.99999
820.0	0.	.830971470E+05	0.	.830971470E+05	0.00001	1.00000
840.0	0.	.255683529E+05	0.	.255683529E+05	0.00000	1.00000
TOTAL	.360472405E+10	.363246743E+10	.356799959E+09	.759399147E+10		

Table D-2.--Population estimates by sex and size group for Pacific cod.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
90.0	0.	0.	.327298642E+06	.327298642E+06	0.00052	0.00052
100.0	.179465841E+05	0.	.118832967E+07	.120617626E+07	0.00190	0.00241
110.0	.130822594E+06	.256444465E+06	.139938656E+07	.178665362E+07	0.00281	0.00523
120.0	.485377775E+06	.573439442E+06	.162475504E+07	.268357226E+07	0.00422	0.00945
130.0	.608363075E+06	.414254162E+06	.117414566E+07	.219676290E+07	0.00346	0.01291
140.0	.518791066E+06	.643427236E+06	.276941340E+06	.143915964E+07	0.00227	0.01518
150.0	.592049215E+06	.755471378E+06	0.	.134752059E+07	0.00212	0.01730
160.0	.833490017E+06	.532168782E+06	0.	.136565880E+07	0.00215	0.01945
170.0	.104428916E+07	.505094030E+06	0.	.154938319E+07	0.00244	0.02189
180.0	.727982841E+06	.154562874E+07	.808544073E+05	.235846595E+07	0.00371	0.02560
190.0	.118053712E+07	.392059854E+06	0.	.157259697E+07	0.00248	0.02808
200.0	.150921086E+07	.165754226E+07	0.	.316675314E+07	0.00499	0.03306
210.0	.143378226E+07	.190757852E+07	0.	.334136079E+07	0.00526	0.03832
220.0	.213899159E+07	.212810910E+07	0.	.426709970E+07	0.00672	0.04504
230.0	.311514165E+07	.296310662E+07	0.	.607824827E+07	0.00957	0.05461
240.0	.544073053E+07	.615665410E+07	0.	.115973846E+08	0.01826	0.07287
250.0	.748003172E+07	.836507819E+07	0.	.158451099E+08	0.02495	0.09781
260.0	.101928836E+08	.925558386E+07	0.	.194488677E+08	0.03062	0.12843
270.0	.108525452E+08	.130704505E+08	0.	.239229957E+08	0.03766	0.16610
280.0	.161518657E+08	.137344040E+08	0.	.299262737E+08	0.04711	0.21321
290.0	.164988234E+08	.148815045E+08	.166358629E+05	.313969637E+08	0.04943	0.26264
300.0	.161598547E+08	.177413455E+08	0.	.339012002E+08	0.05337	0.31601
310.0	.157919112E+08	.140852102E+08	0.	.298771214E+08	0.04704	0.36305
320.0	.124474167E+08	.126115092E+08	0.	.250589259E+08	0.03945	0.40250
330.0	.102803311E+08	.104431019E+08	0.	.207234330E+08	0.03263	0.43513
340.0	.942622732E+07	.869751966E+07	.166358629E+05	.181403828E+08	0.02856	0.46369
350.0	.987385294E+07	.676054972E+07	0.	.156344027E+08	0.02461	0.48830
360.0	.565673712E+07	.592806903E+07	0.	.115848062E+08	0.01824	0.50654
370.0	.392814878E+07	.422322113E+07	0.	.815136991E+07	0.01283	0.51937
380.0	.272736948E+07	.282785075E+07	0.	.555521923E+07	0.00875	0.52812
390.0	.237259341E+07	.293233984E+07	0.	.530493325E+07	0.00835	0.53647
400.0	.197058213E+07	.266252775E+07	0.	.463310988E+07	0.00729	0.54377
410.0	.184115157E+07	.127323412E+07	0.	.311438569E+07	0.00490	0.54867
420.0	.193101197E+07	.298650351E+07	0.	.491791549E+07	0.00774	0.55641
430.0	.174024133E+07	.226748834E+07	0.	.400772968E+07	0.00631	0.56272
440.0	.211682259E+07	.271592379E+07	0.	.483274638E+07	0.00761	0.57033
450.0	.233163009E+07	.253018078E+07	0.	.486181087E+07	0.00765	0.57798
460.0	.264664952E+07	.246885377E+07	0.	.511550329E+07	0.00805	0.58604
470.0	.303745158E+07	.270646707E+07	0.	.574591865E+07	0.00905	0.59508
480.0	.390874256E+07	.317810698E+07	0.	.708684968E+07	0.01116	0.60624
490.0	.293462786E+07	.271075519E+07	0.	.564538305E+07	0.00889	0.61513
500.0	.306446346E+07	.255380433E+07	0.	.561826773E+07	0.00885	0.62397
510.0	.276569268E+07	.224575796E+07	0.	.501149064E+07	0.00789	0.63186
520.0	.361497064E+07	.218399956E+07	0.	.579897020E+07	0.00913	0.64099

Table D-2 .--Population estimates by sex and size group for Pacific cod (cont'd).

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
530.0	.357721967E+07	.395036089E+07	.285615998E+05	.755614216E+07	0.01190	0.65289
540.0	.412141817E+07	.280346821E+07	0.	.692488638E+07	0.01090	0.66379
550.0	.491207426E+07	.315794747E+07	0.	.807002174E+07	0.01271	0.67650
560.0	.457416675E+07	.432644017E+07	.166358629E+05	.891724277E+07	0.01404	0.69053
570.0	.545241207E+07	.503054067E+07	0.	.104829527E+08	0.01650	0.70704
580.0	.540975791E+07	.519115256E+07	0.	.106009105E+08	0.01669	0.72373
590.0	.441416044E+07	.361416518E+07	0.	.802832562E+07	0.01264	0.73637
600.0	.554387744E+07	.580565468E+07	.582506312E+05	.114079827E+08	0.01796	0.75433
610.0	.404483926E+07	.476614628E+07	.285615998E+05	.883954714E+07	0.01392	0.76824
620.0	.572714117E+07	.461866298E+07	.296768759E+05	.103754810E+08	0.01633	0.78458
630.0	.615280224E+07	.448427418E+07	.868122309E+05	.107238886E+08	0.01688	0.80146
640.0	.517513353E+07	.453035743E+07	.576869154E+05	.976317788E+07	0.01537	0.81683
650.0	.440366031E+07	.379011512E+07	.873637913E+05	.828113922E+07	0.01304	0.82987
660.0	.640676536E+07	.383777635E+07	.576869154E+05	.103022286E+08	0.01622	0.84609
670.0	.480069306E+07	.465539508E+07	.582506312E+05	.951433877E+07	0.01498	0.86107
680.0	.450281505E+07	.497647056E+07	0.	.947928561E+07	0.01492	0.87599
690.0	.482058343E+07	.407399956E+07	.285615998E+05	.892314459E+07	0.01405	0.89004
700.0	.437975463E+07	.364654236E+07	.879275071E+05	.811422451E+07	0.01277	0.90282
710.0	.269175488E+07	.488588877E+07	0.	.757764363E+07	0.01193	0.91475
720.0	.209188853E+07	.224583954E+07	.296768759E+05	.436740535E+07	0.00688	0.92162
730.0	.293619674E+07	.329370948E+07	.285615998E+05	.625846782E+07	0.00985	0.93147
740.0	.175232026E+07	.339827849E+07	0.	.515059875E+07	0.00811	0.93958
750.0	.203567583E+07	.336585613E+07	.291253156E+05	.543065727E+07	0.00855	0.94813
760.0	.157310866E+07	.243800900E+07	.285615998E+05	.403967920E+07	0.00636	0.95449
770.0	.134722381E+07	.299539463E+07	0.	.434261844E+07	0.00684	0.96133
780.0	.116998656E+07	.187462707E+07	0.	.304461357E+07	0.00479	0.96612
790.0	.111414046E+07	.247775216E+07	.291253156E+05	.362101787E+07	0.00570	0.97182
800.0	.954455754E+06	.155678730E+07	0.	.251324305E+07	0.00396	0.97578
810.0	.439628848E+06	.172711072E+07	0.	.216673957E+07	0.00341	0.97919
820.0	.490802843E+06	.125615908E+07	0.	.174900192E+07	0.00275	0.98195
830.0	.483786085E+06	.133435710E+07	0.	.181814319E+07	0.00286	0.98481
840.0	.204586295E+06	.131339778E+07	0.	.151798407E+07	0.00239	0.98720
850.0	.245807221E+06	.936875543E+06	0.	.118268676E+07	0.00186	0.98906
860.0	.571243262E+06	.959466266E+06	0.	.153070953E+07	0.00241	0.99147
870.0	.312134261E+06	.386875859E+06	0.	.699010123E+06	0.00110	0.99257
880.0	.149197311E+06	.744000132E+06	0.	.893197443E+06	0.00141	0.99398
890.0	.302999302E+06	.733819787E+06	0.	.103681909E+07	0.00163	0.99561
900.0	.498259057E+05	.633966185E+06	0.	.683792091E+06	0.00108	0.99668
910.0	.838029142E+05	.439078348E+06	0.	.522881263E+06	0.00082	0.99751
920.0	0.	.231779711E+06	0.	.231779711E+06	0.00036	0.99787
930.0	0.	.426567287E+06	0.	.426567287E+06	0.00067	0.99854
940.0	.316592565E+05	.305801406E+06	0.	.337460663E+06	0.00053	0.99908
960.0	.780269726E+05	.132319127E+06	0.	.210346100E+06	0.00033	0.99941
970.0	.173290235E+05	.111641030E+06	0.	.128970054E+06	0.00020	0.99961

Table D-2. --Population estimates by sex and size group for Pacific cod (cont'd).

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
980.0	.647285653E+05	.653346314E+05	0.	.130063197E+06	0.00020	0.99981
990.0	0.	.339396311E+05	0.	.339396311E+05	0.00005	0.99987
1000.0	.331058031E+05	0.	0.	.331058031E+05	0.00005	0.99992
1040.0	0.	.505610678E+05	0.	.505610678E+05	0.00008	1.00000
TOTAL	.312206730E+09	.316098066E+09	.687600991E+07	.635180806E+09		

Table D-3 .--Population estimates by sex and size group for sablefish.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
460.0	.647915812E+05	0.	0.	.647915812E+05	0.01166	0.01166
470.0	.239770663E+06	.127732686E+06	0.	.367503349E+06	0.06613	0.07779
480.0	.176829558E+06	.336113931E+06	0.	.512943490E+06	0.09230	0.17010
490.0	.176829558E+06	0.	0.	.176829558E+06	0.03182	0.20192
500.0	.647915812E+05	.112037977E+06	0.	.176829558E+06	0.03182	0.23374
510.0	.304562244E+06	.351808640E+06	0.	.656370885E+06	0.11811	0.35185
520.0	.288867535E+06	.560188986E+06	0.	.849057421E+06	0.15279	0.50464
530.0	.304562244E+06	0.	0.	.304562244E+06	0.05481	0.55944
540.0	0.	.495236035E+06	0.	.495236035E+06	0.08912	0.64856
550.0	.127732686E+06	.288867535E+06	0.	.416600222E+06	0.07497	0.72353
560.0	.112037977E+06	0.	0.	.112037977E+06	0.02016	0.74369
570.0	.192524267E+06	0.	0.	.192524267E+06	0.03464	0.77833
580.0	.288867535E+06	.127732686E+06	0.	.416600222E+06	0.07497	0.85330
590.0	.127732686E+06	.112037977E+06	0.	.239770663E+06	0.04315	0.89645
610.0	.112037977E+06	.192524267E+06	0.	.304562244E+06	0.05481	0.95125
620.0	.647915812E+05	.647915812E+05	0.	.129583162E+06	0.02332	0.97457
640.0	0.	.112037977E+06	0.	.112037977E+06	0.02016	0.99473
TOTAL	.264672968E+07	.288111118E+07	0.	.552784086E+07		

Table D-4.--Population estimates by sex and size group for yellowfin sole.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
70.0	.879820524E+06	.471946700E+06	0.	.135176722E+07	0.00009	0.00009
80.0	.115406165E+08	.595131038E+07	0.	.174921269E+08	0.00116	0.00124
90.0	.102874526E+08	.563466740E+07	0.	.159221194E+08	0.00105	0.00230
100.0	.714346848E+07	.750642140E+07	0.	.146498899E+08	0.00097	0.00326
110.0	.121613581E+08	.648307876E+07	0.	.186444368E+08	0.00123	0.00449
120.0	.297314825E+08	.242405105E+08	0.	.539719930E+08	0.00356	0.00806
130.0	.692589775E+08	.627724547E+08	0.	.132031433E+09	0.00872	0.01678
140.0	.110522956E+09	.114605114E+09	0.	.225128072E+09	0.01487	0.03164
150.0	.976034651E+08	.958697261E+08	0.	.193493191E+09	0.01278	0.04442
160.0	.828697072E+08	.750328435E+08	0.	.157902551E+09	0.01043	0.05484
170.0	.681024975E+08	.837987361E+08	0.	.151901234E+09	0.01003	0.06487
180.0	.795124748E+08	.655150965E+08	0.	.145027571E+09	0.00958	0.07445
190.0	.776177405E+08	.936465867E+08	0.	.171266727E+09	0.01131	0.08576
200.0	.100669585E+09	.109221459E+09	0.	.209891044E+09	0.01386	0.09962
210.0	.173730638E+09	.157275870E+09	0.	.331006507E+09	0.02186	0.12148
220.0	.286968303E+09	.223906466E+09	0.	.510874769E+09	0.03373	0.15521
230.0	.452701152E+09	.382045759E+09	0.	.834746950E+09	0.05512	0.21033
240.0	.633530741E+09	.538355348E+09	0.	.117188609E+10	0.07738	0.28771
250.0	.861068113E+09	.662996078E+09	0.	.152406419E+10	0.10064	0.38834
260.0	.973449259E+09	.744995851E+09	0.	.171844515E+10	0.11347	0.50181
270.0	.879078568E+09	.794285307E+09	0.	.167336386E+10	0.11049	0.61231
280.0	.700444159E+09	.849510657E+09	0.	.154995481E+10	0.10234	0.71465
290.0	.423716421E+09	.803677185E+09	.325871735E+05	.122762619E+10	0.08106	0.79571
300.0	.246470191E+09	.781253744E+09	0.	.102772393E+10	0.06786	0.86357
310.0	.120390817E+09	.617633724E+09	0.	.738024541E+09	0.04873	0.91231
320.0	.454429334E+08	.496557758E+09	0.	.542000691E+09	0.03579	0.94809
330.0	.325255544E+09	.314652660E+09	0.	.347178214E+09	0.02292	0.97102
340.0	.104525377E+08	.203316360E+09	0.	.213768897E+09	0.01412	0.98513
350.0	.166024431E+07	.948291357E+08	0.	.964893801E+08	0.00637	0.99151
360.0	.201126502E+07	.620183589E+08	0.	.640296240E+08	0.00423	0.99573
370.0	0.	.371437782E+08	0.	.371437782E+08	0.00245	0.99819
380.0	.613781055E+06	.135231811E+08	0.	.141369622E+08	0.00093	0.99912
390.0	0.	.729246238E+07	0.	.729246238E+07	0.00048	0.99960
400.0	0.	.328847268E+07	0.	.328847268E+07	0.00022	0.99982
410.0	0.	.303759380E+06	0.	.303759380E+06	0.00002	0.99984
420.0	0.	.424542070E+06	0.	.424542070E+06	0.00003	0.99987
430.0	0.	.100968542E+07	0.	.100968542E+07	0.00007	0.99993
440.0	0.	.100968542E+07	0.	.100968542E+07	0.00007	1.00000
TOTAL	.560215647E+10	.854227826E+10	.325871735E+05	.151444673E+11		

Table D-5 .--Population estimates by sex and size group for rock sole.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
60.0	.594693295E+06	.577175541E+06	0.	.117187284E+07	0.00021	0.00021
70.0	.719051642E+06	.155363632E+06	.195304251E+07	.282745779E+07	0.00050	0.00071
80.0	.198983690E+07	.138112334E+07	.130706985E+08	.164418591E+08	0.00292	0.00363
90.0	.428547754E+07	.406870317E+07	.771927160E+07	.160734527E+08	0.00285	0.00649
100.0	.106557535E+08	.104741113E+08	.680959339E+07	.279394582E+08	0.00496	0.01145
110.0	.390538266E+08	.249669585E+08	.230157309E+08	.869365160E+08	0.01544	0.02689
120.0	.590219371E+08	.396046747E+08	.324979316E+08	.131124543E+09	0.02329	0.05018
130.0	.107612942E+09	.683958221E+08	.258581055E+08	.201866870E+09	0.03585	0.08603
140.0	.133241982E+09	.923614933E+08	.203639317E+08	.245967407E+09	0.04369	0.12972
150.0	.170324391E+09	.116033256E+09	.161115466E+08	.302469194E+09	0.05372	0.18344
160.0	.153435063E+09	.109453625E+09	.100163886E+08	.269905076E+09	0.04794	0.23138
170.0	.122923007E+09	.973654742E+08	.144714348E+08	.234759916E+09	0.04170	0.27307
180.0	.117394056E+09	.966300989E+08	.434823624E+07	.218372393E+09	0.03879	0.31185
190.0	.137528673E+09	.925646052E+08	.960831158E+06	.230954110E+09	0.04102	0.35288
200.0	.146253006E+09	.880915155E+08	.309364383E+06	.234653886E+09	0.04168	0.39456
210.0	.104309826E+09	.610584285E+08	.103427455E+07	.166402523E+09	0.02955	0.42411
220.0	.115280387E+09	.565754923E+08	.831091567E+06	.172686971E+09	0.03067	0.45478
230.0	.138912776E+09	.786128204E+08	.831091567E+06	.216356690E+09	0.03878	0.49357
240.0	.168119061E+09	.821620547E+08	.235475944E+07	.252655895E+09	0.04487	0.53844
250.0	.198724015E+09	.115526868E+09	.234566186E+07	.316596545E+09	0.05623	0.59467
260.0	.224447155E+09	.117668914E+09	.969606829E+06	.343285716E+09	0.06097	0.65564
270.0	.231462905E+09	.142279218E+09	0.	.373742123E+09	0.06638	0.72202
280.0	.222905272E+09	.124084817E+09	.124663735E+07	.348240727E+09	0.06185	0.78387
290.0	.146337132E+09	.116535049E+09	.170849122E+06	.263047030E+09	0.04672	0.83059
300.0	.784904096E+08	.117769696E+09	.277030522E+06	.196537135E+09	0.03491	0.86550
310.0	.330273906E+08	.965281326E+08	.138515261E+06	.129694037E+09	0.02304	0.88854
320.0	.154380388E+08	.105514127E+09	.138515261E+06	.121490681E+09	0.02158	0.91012
330.0	.958813812E+07	.721488643E+08	.138515261E+06	.818755182E+08	0.01454	0.92466
340.0	.238736712E+07	.762534859E+08	0.	.786408570E+08	0.01397	0.93862
350.0	.111134588E+07	.782094456E+08	0.	.793207914E+08	0.01409	0.95271
360.0	.103969205E+07	.727335183E+08	0.	.737732104E+08	0.01310	0.96582
370.0	.481592966E+06	.638968203E+08	0.	.643784133E+08	0.01143	0.97725
380.0	.134463552E+07	.373934648E+08	0.	.387381004E+08	0.00688	0.98413
390.0	.695568276E+06	.195957408E+08	0.	.202913091E+08	0.00360	0.98773
400.0	0.	.205233823E+08	0.	.205233823E+08	0.00365	0.99138
410.0	0.	.152456966E+08	0.	.152456966E+08	0.00271	0.99409
420.0	0.	.907070602E+07	0.	.907070602E+07	0.00161	0.99570
430.0	0.	.732330772E+07	0.	.732330772E+07	0.00130	0.99700
440.0	0.	.419251496E+07	0.	.419251496E+07	0.00074	0.99774
450.0	0.	.289459807E+07	0.	.289459807E+07	0.00051	0.99826
460.0	0.	.154366664E+07	0.	.154366664E+07	0.00027	0.99853
470.0	0.	.171545188E+07	0.	.171545188E+07	0.00030	0.99884
480.0	0.	.122724785E+06	0.	.122724785E+06	0.00002	0.99886
500.0	0.	.723448789E+06	0.	.723448789E+06	0.00013	0.99899

Table D-5.--Population estimates by sex and size group for rock sole (cont'd).

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
510.0	0.	.12272478 9E+06	0.	.12272478 9E+06	0.00002	0.99501
TOTAL	.289914047E+10	.25376731 9E+10	.187882857E+09	.562469651E+10		

Table D-6. --Population estimates by sex and size group for flathead sole and Bering flounder.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
70.0	.762102664E+06	0.	0.	.762102664E+06	0.00040	0.00040
80.0	.499095455E+06	.685708068E+05	.542537350E+06	.111020356E+07	0.00059	0.00099
90.0	.802859712E+06	.490157635E+06	.173146465E+07	.302448199E+07	0.00160	0.00260
100.0	.182971693E+07	.216015196E+07	.459046538E+07	.858033425E+07	0.00455	0.00715
110.0	.788722476E+07	.371096658E+07	.695916856E+07	.185573599E+08	0.00984	0.01699
120.0	.162459523E+08	.129321083E+08	.875910885E+07	.379371795E+08	0.02012	0.03710
130.0	.163885185E+08	.213072027E+08	.818298984E+07	.458787110E+08	0.02433	0.06143
140.0	.249887216E+08	.210285687E+08	.122801857E+08	.582978760E+08	0.03091	0.09235
150.0	.299395854E+08	.358977411E+08	.102437287E+08	.761310593E+08	0.04037	0.13272
160.0	.489946745E+08	.425717600E+08	.302417597E+07	.945906108E+08	0.05016	0.18288
170.0	.455612595E+08	.381000825E+08	.650958120E+06	.843123000E+08	0.04471	0.22758
180.0	.380717417E+08	.349676072E+08	.144897884E+06	.731842468E+08	0.03881	0.26639
190.0	.362353960E+08	.289685770E+08	0.	.652039730E+08	0.03458	0.30097
200.0	.318339957E+08	.258614826E+08	.869387303E+06	.585648656E+08	0.03106	0.33202
210.0	.343730252E+08	.294648922E+08	.289795768E+06	.641277172E+08	0.03401	0.36603
220.0	.372068927E+08	.356127990E+08	.144897884E+06	.729645896E+08	0.03869	0.40472
230.0	.420525151E+08	.335067502E+08	.289795768E+06	.758490610E+08	0.04022	0.44494
240.0	.391594332E+08	.406711186E+08	.434693652E+06	.802652454E+08	0.04256	0.48750
250.0	.398984851E+08	.311506604E+08	.144897884E+06	.711940434E+08	0.03775	0.52525
260.0	.433394945E+08	.359596813E+08	.869387303E+06	.802085636E+08	0.04253	0.56779
270.0	.436963361E+08	.350420378E+08	.434693652E+06	.791730675E+08	0.04198	0.60977
280.0	.488735324E+08	.414746527E+08	.434693652E+06	.907828787E+08	0.04814	0.65791
290.0	.459993145E+08	.391725596E+08	.289795768E+06	.854616702E+08	0.04532	0.70323
300.0	.494280645E+08	.413239524E+08	.724489420E+06	.914765063E+08	0.04851	0.75174
310.0	.427394320E+08	.386281654E+08	.289795768E+06	.816573932E+08	0.04330	0.79504
320.0	.410286911E+08	.393517120E+08	.724489420E+06	.811048926E+08	0.04301	0.83804
330.0	.310960767E+08	.422544471E+08	.434693652E+06	.737852174E+08	0.03913	0.87717
340.0	.240682184E+08	.456394370E+08	.289795768E+06	.695974511E+08	0.03712	0.91429
350.0	.122034136E+08	.357098343E+08	.144897884E+06	.480581458E+08	0.02548	0.93977
360.0	.585329543E+07	.323603087E+08	.434693652E+06	.386482978E+08	0.02049	0.96027
370.0	.239312309E+07	.229601076E+08	.144897884E+06	.254981286E+08	0.01352	0.97379
380.0	.367938744E+07	.162274713E+08	0.	.199068588E+08	0.01056	0.98434
390.0	.660712821E+06	.115647801E+08	0.	.122454929E+08	0.00649	0.99084
400.0	.146934573E+06	.618965713E+07	0.	.63365917CE+07	0.00336	0.99420
410.0	0.	.439504867E+07	0.	.485504867E+07	0.00260	0.99679
420.0	0.	.334136161E+07	0.	.334136161E+07	0.00177	0.99856
430.0	0.	.894778478E+06	0.	.894778478E+06	0.00047	0.99904
440.0	0.	.369631072E+06	0.	.369631072E+06	0.00020	0.99924
450.0	0.	.198140910E+06	0.	.198140910E+06	0.00011	0.99934
460.0	.156407466E+06	.632297311E+06	0.	.788704779E+06	0.00042	0.99976
470.0	0.	.431854086E+06	0.	.431854086E+06	0.00023	0.99999
490.0	0.	.232706358E+05	0.	.232706358E+05	0.00001	1.00000
TOTAL	.888143650E+09	.933176765E+09	.544994731E+08	.188531991E+10		

Table D-7.--Population estimates by sex and size group for Alaska plaice.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
130.0	0.	.628733755E+05	0.	.628733755E+05	0.00005	0.00005
140.0	.292589155E+05	0.	0.	.292589155E+05	0.00002	0.00007
150.0	.104756993E+06	.349189976E+05	0.	.139675990E+06	0.00010	0.00017
160.0	.201194002E+06	.104756993E+06	0.	.305950995E+06	0.00023	0.00040
170.0	.343529954E+06	.698379952E+05	0.	.413367889E+06	0.00031	0.00071
180.0	.648534886E+06	.291766326E+06	0.	.940301213E+06	0.00070	0.00140
190.0	.423122333E+06	.546398523E+06	0.	.969520856E+06	0.00072	0.00212
200.0	.649007675E+06	.538105816E+06	0.	.118711350E+07	0.00088	0.00300
210.0	.106466824E+07	.417145591E+06	0.	.148181783E+07	0.00110	0.00410
220.0	.159707689E+07	.970845392E+06	0.	.256792228E+07	0.00191	0.00601
230.0	.404617405E+07	.205462750E+07	0.	.610080155E+07	0.00453	0.01054
240.0	.598308195E+07	.356844033E+07	0.	.955152233E+07	0.00709	0.01763
250.0	.664345285E+07	.441615373E+07	0.	.110596066E+08	0.00821	0.02584
260.0	.123449263E+08	.552251938E+07	0.	.178674457E+08	0.01326	0.03910
270.0	.160258600E+08	.913047285E+07	0.	.251563329E+08	0.01867	0.05778
280.0	.338415704E+08	.914838520E+07	0.	.429899556E+08	0.03191	0.08969
290.0	.488542575E+08	.146341940E+08	0.	.634884515E+08	0.04713	0.13681
300.0	.815243431E+08	.167170962E+08	0.	.982414393E+08	0.07292	0.20974
310.0	.102584232E+09	.185004120E+08	0.	.121084643E+09	0.08988	0.29962
320.0	.104000003E+09	.211417804E+08	0.	.125141783E+09	0.09289	0.39251
330.0	.996707640E+08	.251788572E+08	0.	.124849621E+09	0.09267	0.48518
340.0	.861319553E+08	.339325749E+08	0.	.120064530E+09	0.08912	0.57431
350.0	.494227282E+08	.307617449E+08	0.	.801844731E+08	0.05952	0.63383
360.0	.296961917E+08	.365845216E+08	0.	.662807133E+08	0.04920	0.68302
370.0	.104460376E+08	.509414047E+08	0.	.613874423E+08	0.04557	0.72859
380.0	.453002947E+07	.455343458E+08	0.	.500643742E+08	0.03716	0.76575
390.0	.125946135E+07	.469235446E+08	0.	.481930059E+08	0.03577	0.80153
400.0	.468821716E+06	.434010324E+08	0.	.438698541E+08	0.03256	0.83409
410.0	.348848847E+06	.384262323E+08	0.	.387751311E+08	0.02878	0.86287
420.0	0.	.483946929E+08	0.	.483946929E+08	0.03592	0.89880
430.0	.541508336E+05	.346110326E+08	0.	.346751834E+08	0.02574	0.92454
440.0	0.	.243653563E+08	0.	.243653563E+08	0.01809	0.94262
450.0	0.	.163238465E+08	0.	.163238465E+08	0.01212	0.95474
460.0	0.	.104651269E+08	0.	.104651269E+08	0.00777	0.96251
470.0	0.	.573063474E+07	0.	.573063474E+07	0.00425	0.96676
480.0	.120218938E+06	.432077524E+07	0.	.444099417E+07	0.00330	0.97006
490.0	0.	.205121047E+07	0.	.205121047E+07	0.00152	0.97158
500.0	0.	.105469235E+07	0.	.105469235E+07	0.00078	0.97236
510.0	0.	.111892217E+07	0.	.111892217E+07	0.00083	0.97319
520.0	0.	.596803744E+06	0.	.596803744E+06	0.00044	0.97364
530.0	0.	.331885321E+06	0.	.331885321E+06	0.00025	0.97388
540.0	0.	.223260878E+06	0.	.223260878E+06	0.00017	0.97405
550.0	0.	.144590967E+06	0.	.144590967E+06	0.00011	0.97416
TOTAL	.703078256E+09	.509287774E+09	0.	.131236603E+10		

Table D-8.--Population estimates by sex and size group for Greenland turbot.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
100.0	.355542994E+05	0.	0.	.355542994E+05	0.00160	0.00160
120.0	.353172708E+05	0.	0.	.353172708E+05	0.00159	0.00319
140.0	.348525698E+05	0.	0.	.348525698E+05	0.00157	0.00476
150.0	.353172708E+05	0.	0.	.353172708E+05	0.00159	0.00635
160.0	.353172708E+05	.355542994E+05	0.	.708715702E+05	0.00319	0.00954
170.0	0.	.355542994E+05	0.	.355542994E+05	0.00160	0.01114
180.0	.355542994E+05	.355542994E+05	0.	.711085989E+05	0.00320	0.01434
190.0	.355542994E+05	.106662898E+06	0.	.142217198E+06	0.00640	0.02074
200.0	.884282202E+05	.106188841E+06	0.	.194617061E+06	0.00876	0.02950
210.0	.706345415E+05	0.	0.	.706345415E+05	0.00318	0.03267
220.0	.353172708E+05	.353172708E+05	0.	.706345415E+05	0.00318	0.03585
230.0	.353172708E+05	.353172708E+05	0.	.706345415E+05	0.00318	0.03903
240.0	.353172708E+05	0.	0.	.353172708E+05	0.00159	0.04062
250.0	.357945312E+05	0.	0.	.357945312E+05	0.00161	0.04223
260.0	.105487111E+06	0.	0.	.105487111E+06	0.00475	0.04698
270.0	.106188841E+06	.706345415E+05	0.	.176823383E+06	0.00796	0.05494
280.0	.713488306E+05	.353172708E+05	0.	.106666101E+06	0.00480	0.05974
290.0	.353172708E+05	.353172708E+05	0.	.706345415E+05	0.00318	0.06292
300.0	.106425870E+06	.211448220E+06	0.	.317874150E+06	0.01431	0.07722
310.0	.140804382E+06	.706345415E+05	0.	.211438924E+06	0.00952	0.08674
320.0	.106425870E+06	.348525698E+05	0.	.141278439E+06	0.00636	0.09309
330.0	.248421801E+06	.281666000E+06	0.	.530087801E+06	0.02386	0.11695
340.0	.353191421E+06	.282560082E+06	0.	.635751503E+06	0.02861	0.14556
350.0	.315304260E+06	.176131009E+06	0.	.491435269E+06	0.02212	0.16768
360.0	.283274371E+06	.181125907E+06	0.	.464400278E+06	0.02090	0.18858
370.0	.422669014E+06	.458918764E+06	0.	.881587777E+06	0.03967	0.22825
380.0	.457075285E+06	.319598304E+06	0.	.776073589E+06	0.03497	0.26322
390.0	.297774252E+06	.282316836E+06	0.	.580091088E+06	0.02611	0.28933
400.0	.608055543E+06	.171584493E+07	0.	.232790048E+07	0.10476	0.39409
410.0	.673458302E+06	.389216763E+06	0.	.106267507E+07	0.04782	0.44191
420.0	.637426655E+06	.529802293E+06	0.	.116722955E+07	0.05253	0.49444
430.0	.512291787E+06	.454003113E+06	0.	.966294900E+06	0.04349	0.53793
440.0	.479854070E+06	.505748020E+06	0.	.985642090E+06	0.04436	0.58228
450.0	.263627931E+06	.353434855E+06	0.	.617062787E+06	0.02777	0.61005
460.0	.279387385E+06	.383589020E+06	0.	.662977290E+06	0.02984	0.63989
470.0	.404676271E+06	.732359426E+06	0.	.118703570E+07	0.05342	0.69331
480.0	.240559372E+06	.671546034E+06	0.	.912105406E+06	0.04105	0.73436
490.0	.412790282E+06	.386877560E+06	0.	.799667841E+06	0.03599	0.77035
500.0	.140816942E+06	.281658352E+06	0.	.422675294E+06	0.01902	0.78937
510.0	.295510360E+06	.302259589E+06	0.	.597769949E+06	0.02692	0.81629
520.0	.708715702E+05	.228069112E+06	0.	.298940682E+06	0.01345	0.82974
530.0	.119551659E+06	.711118020E+05	0.	.190663501E+06	0.00858	0.83832
540.0	.158612324E+06	.281147203E+06	0.	.439759527E+06	0.01979	0.85811
550.0	.104557710E+06	.244363280E+06	0.	.348920989E+06	0.01570	0.87381

Table D-8.--Population estimates by sex and size group for Greenland turbot (cont'd).

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
560.0	.353172708E+05	.420329936E+06	0.	.455647206E+06	0.02051	0.89432
570.0	.134955653E+07	.228062895E+06	0.	.157761943E+07	0.07100	0.96532
580.0	0.	.350833816E+05	0.	.350833816E+05	0.00158	0.96689
590.0	.107383594E+06	0.	0.	.107383594E+06	0.00483	0.97173
600.0	.701667631E+05	.105499671E+06	0.	.175666434E+06	0.00791	0.97963
610.0	0.	.348525698E+05	0.	.348525698E+05	0.00157	0.98120
620.0	0.	.105499671E+06	0.	.105499671E+06	0.00475	0.98595
710.0	0.	.350833816E+05	0.	.350833816E+05	0.00158	0.98753
730.0	0.	.350833816E+05	0.	.350833816E+05	0.00158	0.98911
TOTAL	.105628973E+08	.114157933E+08	0.	.219786956E+08		

Table D-9.--Population estimates by sex and size group for arrowtooth and Kamchatka flounders.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
90.0	0.	0.	.229324277E+05	.229324277E+05	0.00004	0.00004
100.0	0.	.174670309E+05	0.	.174670309E+05	0.00003	0.00007
120.0	0.	.406323523E+05	0.	.406323523E+05	0.00007	0.00015
130.0	.216575975E+06	.150265512E+06	0.	.366841387E+06	0.00066	0.00081
140.0	.993237265E+06	.172956302E+06	0.	.116619357E+07	0.00211	0.00292
150.0	.206118953E+07	.141787800E+07	0.	.347906853E+07	0.00629	0.00921
160.0	.311948140E+07	.561429217E+07	0.	.873373357E+07	0.01579	0.02499
170.0	.381073262E+07	.493706680E+07	0.	.874779962E+07	0.01581	0.04080
180.0	.276763033E+07	.527964403E+07	0.	.804727436E+07	0.01455	0.05535
190.0	.132673710E+07	.368767232E+07	0.	.501440992E+07	0.00906	0.06441
200.0	.168924077E+07	.279431391E+07	0.	.448355468E+07	0.00810	0.07251
210.0	.792176776E+06	.226232159E+07	0.	.305449876E+07	0.00552	0.07804
220.0	.426295227E+06	.257228587E+07	0.	.309858110E+07	0.00560	0.08364
230.0	.112096366E+07	.233150878E+07	0.	.345287244E+07	0.00624	0.08988
240.0	.414385969E+07	.277521362E+07	0.	.691907331E+07	0.01251	0.10238
250.0	.553587486E+07	.613660992E+07	0.	.116724848E+08	0.02110	0.12348
260.0	.117077032E+08	.110378859E+08	0.	.227455931E+08	0.04111	0.16459
270.0	.139035237E+08	.176557255E+08	0.	.315592492E+08	0.05704	0.22163
280.0	.216394601E+08	.220431700E+08	0.	.436826301E+08	0.07895	0.30059
290.0	.227568622E+08	.235721053E+08	0.	.463289675E+08	0.08374	0.38433
300.0	.243154569E+08	.326574156E+08	0.	.569728765E+08	0.10298	0.48730
310.0	.187854728E+08	.304961548E+08	0.	.492816276E+08	0.08907	0.57638
320.0	.109911873E+08	.283815504E+08	0.	.393727377E+08	0.07116	0.64754
330.0	.839222923E+07	.167192541E+08	0.	.251114834E+08	0.04539	0.69293
340.0	.716891180E+07	.142209065E+08	0.	.213898183E+08	0.03866	0.73159
350.0	.651027485E+07	.899657519E+07	0.	.154068501E+08	0.02785	0.75944
360.0	.580181231E+07	.763217213E+07	0.	.134339844E+08	0.02428	0.78372
370.0	.493265757E+07	.755323754E+07	0.	.124858951E+08	0.02257	0.80628
380.0	.239598623E+07	.690468742E+07	0.	.930467365E+07	0.01682	0.82310
390.0	.328905741E+07	.791881540E+07	0.	.112079128E+08	0.02026	0.84336
400.0	.282739767E+07	.724921343E+07	0.	.100766111E+08	0.01821	0.86157
410.0	.181286124E+07	.615255125E+07	0.	.796581249E+07	0.01440	0.87597
420.0	.217253021E+07	.742202313E+07	0.	.959455335E+07	0.01734	0.89331
430.0	.165762274E+07	.751088152E+07	0.	.936850426E+07	0.01693	0.91025
440.0	.554721967E+06	.738303332E+07	0.	.793775530E+07	0.01435	0.92459
450.0	.561448553E+06	.934534781E+07	0.	.104067964E+08	0.01881	0.94340
460.0	.466458660E+06	.601651434E+07	0.	.648297300E+07	0.01172	0.95512
470.0	.483499347E+06	.327746629E+07	0.	.376096563E+07	0.00680	0.96192
480.0	.613129865E+06	.219561935E+07	0.	.281274971E+07	0.00508	0.96700
490.0	.134185547E+06	.167317698E+07	0.	.180736253E+07	0.00327	0.97027
500.0	.122551613E+06	.128459156E+07	0.	.140714318E+07	0.00254	0.97281
510.0	.105967075E+06	.949666071E+06	0.	.105483315E+07	0.00191	0.97472
520.0	0.	.266723468E+06	0.	.266723468E+06	0.00048	0.97520
530.0	0.	.128489282E+07	0.	.128489282E+07	0.00232	0.97752

Table D-9.--Population estimates by sex and size group for arrowtooth and Kamchatka flounders (cont'd).

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
540.0	.68233472SE+05	.139203048E+07	0.	.146026395E+07	0.00264	0.98016
550.0	0.	.198968311E+06	0.	.198968311E+06	0.00036	0.98052
560.0	0.	.109259532E+07	0.	.109259532E+07	0.00197	0.98250
570.0	0.	.465287060E+06	0.	.465287060E+06	0.00084	0.98334
580.0	0.	.518957916E+06	0.	.518957916E+06	0.00094	0.98428
590.0	0.	.783136779E+06	0.	.783136779E+06	0.00142	0.98569
600.0	0.	.658552383E+06	0.	.658552383E+06	0.00119	0.98688
610.0	0.	.260845917E+06	0.	.260845917E+06	0.00047	0.98735
620.0	0.	.568615497E+06	0.	.568615497E+06	0.00103	0.98838
630.0	0.	.258327779E+06	0.	.258327779E+06	0.00047	0.98885
640.0	0.	.356773447E+05	0.	.356773447E+05	0.00006	0.98891
650.0	0.	.845052717E+05	0.	.845052717E+05	0.00015	0.98906
670.0	0.	.376727597E+05	0.	.376727597E+05	0.00007	0.98913
TOTAL	.202379235E+09	.344850628E+09	.229324277E+05	.547252800E+09		

Table D-10.--Population estimates by sex and size group for Pacific halibut.

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
140.0	0.	0.	.162962242E+05	.162962242E+05	0.00048	0.00048
160.0	0.	0.	.162962242E+05	.162962242E+05	0.00048	0.00096
180.0	0.	0.	.286174290E+05	.286174290E+05	0.00085	0.00181
200.0	0.	0.	.116396382E+06	.116396382E+06	0.00344	0.00524
210.0	0.	0.	.805071672E+05	.805071672E+05	0.00238	0.00762
220.0	0.	0.	.886140320E+05	.886140320E+05	0.00262	0.01024
230.0	0.	0.	.225327534E+06	.225327534E+06	0.00665	0.01689
240.0	0.	0.	.235251356E+06	.235251356E+06	0.00695	0.02384
250.0	0.	0.	.620075357E+05	.620075357E+05	0.00183	0.02567
260.0	0.	0.	.581132896E+05	.581132896E+05	0.00172	0.02739
270.0	0.	0.	.916802377E+05	.916802377E+05	0.00271	0.03009
300.0	0.	0.	.585483009E+05	.585483009E+05	0.00173	0.03182
310.0	0.	0.	.654727092E+05	.654727092E+05	0.00193	0.03376
320.0	0.	0.	.624482045E+05	.624482045E+05	0.00184	0.03560
330.0	0.	0.	.620579332E+05	.620579332E+05	0.00183	0.03743
340.0	0.	0.	.108169042E+06	.108169042E+06	0.00319	0.04063
350.0	0.	0.	.139434487E+06	.139434487E+06	0.00412	0.04474
360.0	0.	0.	.166788288E+06	.166788288E+06	0.00493	0.04967
370.0	0.	0.	.167369351E+06	.167369351E+06	0.00494	0.05461
380.0	0.	0.	.318928625E+06	.318928625E+06	0.00942	0.06403
390.0	0.	0.	.291456228E+06	.291456228E+06	0.00861	0.07264
400.0	0.	0.	.510303229E+06	.510303229E+06	0.01507	0.08770
410.0	0.	0.	.561176503E+06	.561176503E+06	0.01657	0.10428
420.0	0.	0.	.473633849E+06	.473633849E+06	0.01399	0.11826
430.0	0.	0.	.582227200E+06	.582227200E+06	0.01719	0.13545
440.0	0.	0.	.892050968E+06	.892050968E+06	0.02634	0.16180
450.0	0.	0.	.670580087E+06	.670580087E+06	0.01980	0.18160
460.0	0.	0.	.663602011E+06	.663602011E+06	0.01960	0.20119
470.0	0.	0.	.553171069E+06	.553171069E+06	0.01633	0.21753
480.0	0.	0.	.703688604E+06	.703688604E+06	0.02078	0.23831
490.0	0.	0.	.877034799E+06	.877034799E+06	0.02590	0.26420
500.0	0.	0.	.107522405E+07	.107522405E+07	0.03175	0.29595
510.0	0.	0.	.103116924E+07	.103116924E+07	0.03045	0.32640
520.0	0.	0.	.825013055E+06	.825013055E+06	0.02436	0.35077
530.0	0.	0.	.157340614E+07	.157340614E+07	0.04645	0.39723
540.0	0.	0.	.117292656E+07	.117292656E+07	0.03464	0.43186
550.0	0.	0.	.974866380E+06	.974866380E+06	0.02879	0.46065
560.0	0.	0.	.124779750E+07	.124779750E+07	0.03685	0.49750
570.0	0.	0.	.147160936E+07	.147160936E+07	0.04346	0.54095
580.0	0.	0.	.120426323E+07	.120426323E+07	0.03556	0.57651
590.0	0.	0.	.971985020E+06	.971985020E+06	0.02870	0.60521
600.0	0.	0.	.123100278E+07	.123100278E+07	0.03635	0.64156
610.0	0.	0.	.129496696E+07	.129496696E+07	0.03824	0.67980
620.0	0.	0.	.108575641E+07	.108575641E+07	0.03206	0.71187

Table D-10.--Population estimates by sex and size group for Pacific halibut (cont'd).

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
630.0	0.	0.	.825829317E+06	.825829317E+06	0.02439	0.73625
640.0	0.	0.	.903750053E+06	.903750053E+06	0.02669	0.76294
650.0	0.	0.	.641145407E+06	.641145407E+06	0.01893	0.78187
660.0	0.	0.	.549548475E+06	.549548475E+06	0.01623	0.79810
670.0	0.	0.	.558763852E+06	.558763852E+06	0.01650	0.81460
680.0	0.	0.	.575564170E+06	.575564170E+06	0.01700	0.83159
690.0	0.	0.	.765334629E+06	.765334629E+06	0.02260	0.85419
700.0	0.	0.	.429802686E+06	.429802686E+06	0.01269	0.86689
710.0	0.	0.	.322662658E+06	.322662658E+06	0.00953	0.87641
720.0	0.	0.	.342984751E+06	.342984751E+06	0.01013	0.88654
730.0	0.	0.	.336543765E+06	.336543765E+06	0.00994	0.89648
740.0	0.	0.	.235752500E+06	.235752500E+06	0.00696	0.90344
750.0	0.	0.	.266590738E+06	.266590738E+06	0.00787	0.91131
760.0	0.	0.	.348077759E+06	.348077759E+06	0.01028	0.92159
770.0	0.	0.	.249843289E+06	.249843289E+06	0.00738	0.92897
780.0	0.	0.	.192857091E+06	.192857091E+06	0.00569	0.93466
790.0	0.	0.	.925027241E+05	.925027241E+05	0.00273	0.93740
800.0	0.	0.	.119622942E+06	.119622942E+06	0.00353	0.94093
810.0	0.	0.	.124636476E+06	.124636476E+06	0.00368	0.94461
820.0	0.	0.	.111582514E+06	.111582514E+06	0.00329	0.94790
830.0	0.	0.	.172200095E+06	.172200095E+06	0.00508	0.95299
840.0	0.	0.	.113071453E+06	.113071453E+06	0.00334	0.95633
850.0	0.	0.	.162117018E+06	.162117018E+06	0.00479	0.96111
860.0	0.	0.	.353829780E+05	.353829780E+05	0.00104	0.96215
870.0	0.	0.	.482341499E+05	.482341499E+05	0.00142	0.96358
880.0	0.	0.	.792686612E+05	.792686612E+05	0.00234	0.96592
890.0	0.	0.	.143719761E+06	.143719761E+06	0.00424	0.97017
900.0	0.	0.	.115759551E+06	.115759551E+06	0.00342	0.97359
910.0	0.	0.	.167493181E+05	.167493181E+05	0.00049	0.97408
920.0	0.	0.	.124560324E+06	.124560324E+06	0.00368	0.97775
940.0	0.	0.	.628140916E+05	.628140916E+05	0.00185	0.97961
950.0	0.	0.	.145219499E+06	.145219499E+06	0.00429	0.98390
970.0	0.	0.	.460234685E+05	.460234685E+05	0.00136	0.98526
980.0	0.	0.	.669183080E+05	.669183060E+05	0.00198	0.98724
1010.0	0.	0.	.490243318E+05	.490243318E+05	0.00145	0.98869
1020.0	0.	0.	.356536789E+05	.356536789E+05	0.00105	0.98974
1060.0	0.	0.	.244908512E+05	.244908512E+05	0.00072	0.99046
1080.0	0.	0.	.633224804E+05	.633824804E+05	0.00187	0.99233
1100.0	0.	0.	.512844445E+05	.512844445E+05	0.00151	0.99385
1110.0	0.	0.	.330455423E+05	.330455423E+05	0.00098	0.99482
1130.0	0.	0.	.164034362E+05	.164034362E+05	0.00048	0.99531
1150.0	0.	0.	.323701339E+05	.323701339E+05	0.00096	0.99626
1190.0	0.	0.	.158167697E+05	.158167697E+05	0.00047	0.99673
1250.0	0.	0.	.304609403E+05	.304609403E+05	0.00090	0.99763

Table D-10.--Population estimates by sex and size group for Pacific halibut (cont'd).

LENGTH(MM)	*** MALES ***	** FEMALES **	** UNSEXED **	*** TOTAL ***	PROPORTION	CUMULATIVE PROPORTION
1350.0	0.	0.	.339396311E+05	.339396311E+05	0.00100	0.99863
1540.0	0.	0.	.306198848E+05	.306198848E+05	0.00090	0.99554
1760.0	0.	0.	.157120229E+05	.157120229E+05	0.00046	1.00000
TOTAL	0.	0.	.338648742E+08	.338648742E+08		

APPENDIX E

Age-length Key for Walleye Pollock

Appendix E presents age-length data collected for walleye pollock during the 1984 groundfish survey, in separate age-length keys for males, females and unsexed fish. The "unsexed" key is actually a combined key, including the age-length data taken from males, females and unsexed (usually juvenile) specimens. In determining the population age composition (Appendix F), the male key was applied to the male population, the female key to the female population, and the combined key to the unsexed population, apportioning ages among length categories in the proportions occurring in the keys. When no age samples were available for a given length interval, ages for fish of that length were apportioned by interpolation, over gaps of not more than 5 centimeters.

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Table E-1.--Age-length key for walleye pollock.

MALE KEY

LENGTH	AVG AGE	STD. DEV.	FREQUENCY	AGE (IN YEARS) 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26+
100	1.00	0.00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	1.00	0.00	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	1.00	0.00	11	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	1.00	0.00	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	1.00	0.00	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	1.17	0.41	6	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	1.25	0.49	7	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	1.67	0.52	6	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	1.57	0.53	7	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
190	2.00	0.00	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200	1.75	0.46	8	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
210	2.00	0.00	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
220	2.00	0.47	10	0	1	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230	2.00	0.00	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
240	2.00	0.00	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250	2.44	0.53	9	0	0	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
260	2.27	0.47	11	0	0	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
270	2.25	0.46	8	0	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
280	2.44	0.53	9	0	0	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
290	2.43	0.53	7	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
300	3.13	0.35	8	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
310	3.67	1.00	9	0	0	0	5	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
320	3.88	1.13	8	0	0	0	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
330	3.33	0.52	6	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
340	4.00	0.92	20	0	0	0	6	10	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
350	3.65	0.70	17	0	0	0	8	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
360	4.00	0.69	18	0	0	0	4	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
370	4.40	0.68	20	0	0	0	1	11	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
380	4.28	0.67	18	0	0	0	2	9	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
390	4.55	0.85	22	0	0	0	1	11	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400	5.25	1.07	20	0	0	0	2	2	6	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
410	5.05	1.02	21	0	0	0	1	5	9	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
420	5.38	0.92	21	0	0	0	0	5	4	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
430	5.63	0.76	19	0	0	0	0	1	7	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
440	5.61	0.70	18	0	0	0	0	1	6	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
450	5.75	0.44	20	0	0	0	0	0	5	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
460	5.95	0.51	20	0	0	0	0	1	0	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
470	5.85	0.59	20	0	0	0	0	0	5	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
480	6.11	0.57	19	0	0	0	0	0	2	13	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
490	6.32	0.89	19	0	0	0	0	1	0	12	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
500	5.85	0.58	18	0	0	0	0	0	4	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
510	6.21	0.98	19	0	0	0	0	0	4	9	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
520	6.47	0.72	17	0	0	0	0	0	0	11	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table E-1.--Age-length key for walleye pollock (cont'd).

MALE KEY

LENGTH	AVG AGE	STD. DEV.	FREQUENCY	AGE (IN YEARS) 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26+
530	6.44	1.15	18	0	0	0	0	0	3	9	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
540	7.00	1.12	20	0	0	0	0	0	1	7	5	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
550	7.37	0.96	19	0	0	0	0	0	0	3	9	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
560	7.56	1.46	18	0	0	0	0	0	0	5	6	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
570	7.00	1.03	20	0	0	0	0	0	0	7	9	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
580	7.44	1.34	18	0	0	0	0	0	0	6	4	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
590	7.53	1.68	19	0	0	0	0	0	0	4	10	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
600	8.55	1.97	17	0	0	0	0	0	0	1	4	5	4	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
610	8.33	1.40	15	0	0	0	0	0	0	0	5	4	4	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
620	8.50	1.25	18	0	0	0	0	0	0	0	5	4	5	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
630	8.82	1.78	11	0	0	0	0	0	0	0	2	4	3	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
640	9.27	2.22	15	0	0	0	0	0	0	0	3	3	5	1	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
650	8.17	0.94	12	0	0	0	0	0	0	1	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
660	8.21	1.93	14	0	0	0	0	0	0	1	6	3	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
670	9.00	1.71	12	0	0	0	0	0	0	1	1	2	5	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
680	8.67	1.51	6	0	0	0	0	0	0	0	2	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
690	9.50	1.69	8	0	0	0	0	0	0	0	1	2	0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
700	11.25	3.30	4	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
710	13.00	0.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
720	10.00	2.00	3	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
740	14.00	0.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
770	9.00	0.00	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	5.44	2.58	826	0	52	90	62	82	85	200	104	55	58	15	8	7	4	2	1	1	0	0	0	0	0	0	0	0	0	0

Table E-1.--Age-length key for walleye pollock (cont'd).

FEMALE KEY

LEN GTH	AVG AGE	STD. DEV.	FREQ- UENCY	AGE (IN YEARS) 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26+
110	1.00	0.00	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	1.00	0.00	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	1.00	0.00	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	1.00	0.00	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	1.00	0.00	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	1.00	0.00	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	1.50	0.55	6	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	1.67	0.52	6	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
190	1.83	0.41	6	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200	2.00	0.00	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
210	2.00	0.00	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
220	2.00	0.00	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230	2.00	0.00	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
240	2.17	0.41	6	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250	2.22	0.44	9	0	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
260	2.17	0.39	12	0	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
270	2.50	0.53	8	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
280	2.80	0.45	5	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
290	2.33	0.52	6	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
300	3.22	0.44	9	0	0	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
310	3.40	0.55	5	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
320	3.25	0.71	8	0	0	0	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
330	3.67	0.82	6	0	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
340	3.64	0.92	11	0	0	0	6	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
350	4.00	0.96	14	0	0	0	4	8	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
360	3.88	0.81	16	0	0	0	5	9	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
370	4.35	0.78	18	0	0	0	1	11	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
380	4.62	0.97	21	0	0	0	3	6	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
390	4.25	1.06	21	0	0	0	5	9	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400	4.70	0.66	20	0	0	0	0	8	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
410	4.90	1.17	20	0	0	0	2	7	3	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
420	5.26	1.05	19	0	0	0	0	6	4	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
430	5.45	0.89	20	0	0	0	0	3	7	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
440	5.38	0.67	21	0	0	0	0	2	9	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
450	5.90	0.54	21	0	0	0	0	0	4	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
460	5.94	0.85	16	0	0	0	0	1	2	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
470	5.83	0.62	18	0	0	0	0	1	2	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
480	5.85	0.46	19	0	0	0	0	0	3	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
490	6.04	0.64	23	0	0	0	0	0	3	17	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
500	6.25	0.91	20	0	0	0	0	0	3	11	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
510	6.25	0.55	20	0	0	0	0	0	1	13	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
520	6.14	0.35	22	0	0	0	0	0	0	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
530	6.37	0.96	19	0	0	0	0	0	3	9	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table E-1. --Age-length key for walleye pollock (cont'd).

FEMALE KEY

LEN GTH	AVE AGE	STD. DEV.	FREQ- UENCY	AGE (IN YEARS) 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26+
540	6.48	1.17	21	0	0	0	0	0	1	13	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
550	6.72	0.75	18	0	0	0	0	0	0	8	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
560	7.55	2.16	20	0	0	0	0	0	2	7	3	2	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
570	7.10	1.12	20	0	0	0	0	0	1	4	10	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
580	7.50	1.79	22	0	0	0	0	0	0	7	6	5	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
590	8.05	1.99	19	0	0	0	0	0	1	1	8	3	2	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
600	7.81	1.40	21	0	0	0	0	0	0	2	9	5	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
610	8.45	1.54	20	0	0	0	0	0	0	1	5	6	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
620	8.05	1.85	20	0	0	0	0	0	0	2	7	7	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
630	8.67	2.08	21	0	0	0	0	0	0	1	7	5	2	1	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
640	8.95	1.76	20	0	0	0	0	0	0	0	3	8	3	2	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
650	8.79	2.12	19	0	0	0	0	0	0	0	8	2	4	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0
660	9.53	2.58	17	0	0	0	0	0	0	0	4	4	1	4	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
670	9.14	1.75	14	0	0	0	0	0	0	0	2	5	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
680	8.53	1.43	19	0	0	0	0	0	0	5	6	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
690	9.13	1.60	15	0	0	0	0	0	0	2	0	2	4	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
700	9.63	2.58	16	0	0	0	0	0	0	0	2	5	4	1	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
710	9.08	1.24	12	0	0	0	0	0	0	0	1	3	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
720	10.25	2.86	12	0	0	0	0	0	0	0	1	3	3	0	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
730	10.23	1.79	13	0	0	0	0	0	0	0	0	3	3	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
740	10.60	1.14	5	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
750	10.50	0.71	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
760	11.75	3.06	8	0	0	0	0	0	0	0	0	0	1	4	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
770	10.25	1.71	4	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
780	11.00	0.00	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
790	10.00	1.41	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
820	14.00	0.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
830	13.00	0.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	5.99	2.90	943	0	53	86	58	84	76	220	124	86	53	36	32	15	5	9	3	2	0	1	0	0	0	0	0	0	0	0

Table E-1.--Age-length key for walleye pollock (cont'd).

UNSEXED KEY

LENGTH	AVG AGE	STD. DEV.	FREQUENCY	AGE (IN YEARS) 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26+
100	1.00	0.00	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	1.00	0.00	20	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	1.00	0.00	26	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	1.00	0.00	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	1.00	0.00	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	1.12	0.33	17	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	1.25	0.45	16	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	1.67	0.49	15	0	5	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	1.67	0.49	15	0	5	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
190	1.94	0.24	17	0	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200	1.88	0.34	16	0	2	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
210	2.00	0.00	21	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
220	2.00	0.32	21	0	1	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230	2.00	0.00	20	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
240	2.06	0.25	16	0	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250	2.33	0.49	18	0	0	12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
260	2.22	0.42	23	0	0	18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
270	2.38	0.50	16	0	0	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
280	2.57	0.51	14	0	0	6	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
290	2.38	0.51	13	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
300	3.18	0.39	17	0	0	0	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
310	3.57	0.85	14	0	0	0	8	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
320	3.56	0.96	16	0	0	0	11	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
330	3.50	0.67	12	0	0	1	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
340	3.87	0.92	31	0	0	0	12	14	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
350	3.81	0.83	31	0	0	0	12	15	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
360	3.94	0.74	34	0	0	0	9	19	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
370	4.35	0.72	38	0	0	0	2	22	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
380	4.46	0.85	39	0	0	0	5	15	15	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
390	4.44	0.96	43	0	0	0	6	20	9	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400	4.98	0.92	40	0	0	0	2	10	16	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
410	4.98	1.08	41	0	0	0	3	12	12	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
420	5.33	0.97	40	0	0	0	0	11	8	18	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
430	5.54	0.82	39	0	0	0	0	4	14	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
440	5.49	0.68	39	0	0	0	0	3	15	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
450	5.83	0.50	41	0	0	0	0	0	9	30	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
460	5.94	0.67	36	0	0	0	0	2	2	29	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
470	5.84	0.59	38	0	0	0	0	1	7	27	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
480	6.00	0.52	38	0	0	0	0	0	5	28	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
490	6.17	0.76	42	0	0	0	0	1	3	29	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
500	6.08	0.78	38	0	0	0	0	0	7	23	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
510	6.23	0.78	39	0	0	0	0	0	5	22	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
520	6.28	0.56	39	0	0	0	0	0	0	30	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table E-1.--Age-length key for walleye pollock (cont'd).

UNSEXED KEY

LENGTH	AVG AGE	STD. DEV.	FREQUENCY	AGE (IN YEARS) 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26+
530	6.41	1.04	37	0	0	0	0	0	6	18	6	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
540	6.73	1.16	41	0	0	0	0	0	2	20	11	5	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
550	7.05	0.91	37	0	0	0	0	0	0	11	16	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
560	7.55	1.84	38	0	0	0	0	0	2	12	9	4	4	5	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
570	7.05	1.06	40	0	0	0	0	0	1	11	19	4	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
580	7.48	1.58	40	0	0	0	0	0	0	13	10	8	7	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
590	7.79	1.83	38	0	0	0	0	0	1	5	18	3	6	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
600	8.16	1.70	38	0	0	0	0	0	0	3	13	10	7	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0
610	8.40	1.46	35	0	0	0	0	0	0	1	10	10	7	4	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
620	8.26	1.59	38	0	0	0	0	0	0	2	12	11	6	4	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
630	8.72	1.95	32	0	0	0	0	0	0	1	9	9	5	1	4	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
640	9.05	1.95	35	0	0	0	0	0	0	0	6	11	8	3	3	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0
650	8.55	1.77	31	0	0	0	0	0	0	1	9	7	9	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0
660	8.94	2.37	31	0	0	0	0	0	0	1	10	7	2	5	2	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0
670	9.08	1.70	26	0	0	0	0	0	0	1	3	7	7	1	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
680	8.56	1.42	25	0	0	0	0	0	0	0	7	6	7	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
690	9.26	1.60	23	0	0	0	0	0	0	2	1	4	4	7	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
700	9.95	2.72	20	0	0	0	0	0	0	0	2	5	6	1	2	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0
710	9.38	1.61	13	0	0	0	0	0	0	0	1	3	4	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
720	10.20	2.65	15	0	0	0	0	0	0	0	1	4	3	1	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0
730	10.23	1.79	13	0	0	0	0	0	0	0	0	3	3	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
740	11.17	1.72	6	0	0	0	0	0	0	0	0	0	1	1	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
750	10.50	0.71	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
760	11.75	3.06	8	0	0	0	0	0	0	0	0	0	1	4	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
770	10.00	1.58	5	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
780	11.00	0.00	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
790	10.00	1.41	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
820	14.00	0.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
830	13.00	0.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	5.64	2.81	1806	0	132	186	120	166	161	420	228	141	111	51	40	22	9	11	4	3	0	1	0	0	0	0	0	0	0	0

APPENDIX F

Estimated Age Composition for Walleye Pollock

Appendix F presents population estimates for the on-bottom portion of the eastern Bering Sea walleye pollock population, by age class for the total survey area, along with mean length for each age class.

List of Tables

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Table F-1. --Estimated age composition and mean length at age of walleye pollock.

ALL STRATA COMBINED

SPECIES 21740 THERAGRA CHALCOGRAMMA
WALLEYE POLLOCK

MALES, FEMALES, AND UNSEXED

AGE CLASS	NUMBER	PROPORTION	CUMULATIVE NUMBER	CUMULATIVE PROPORTION	MEAN LENGTH	STD. DEV. OF LENGTH
BELOW MINIMUM KEY LENGTH	1,871,133	0.0002	1,871,133	0.0002	89.28	4.06
1	359,797,949	0.0474	361,669,081	0.0476	134.25	21.39
2	241,013,875	0.0317	602,682,956	0.0794	220.12	40.49
3	402,508,575	0.0530	1,005,191,531	0.1324	350.20	40.29
4	1,142,425,283	0.1504	2,147,620,814	0.2828	387.19	31.76
5	1,390,569,653	0.1831	3,538,190,467	0.4659	427.05	42.31
6	3,197,952,275	0.4211	6,736,142,742	0.8870	463.88	39.72
7	609,474,147	0.0803	7,345,616,889	0.9673	496.57	54.60
* 8	134,204,365	0.0177	7,479,821,254	0.9850	548.16	62.26
9	62,295,002	0.0082	7,542,120,256	0.9932	580.95	62.99
* 10	21,986,114	0.0029	7,564,106,370	0.9961	611.29	53.23
11	14,710,752	0.0019	7,578,817,122	0.9980	627.47	68.79
* 12	5,790,431	0.0008	7,584,607,553	0.9988	649.72	44.15
13	3,416,682	0.0005	7,588,026,234	0.9992	600.55	58.43
* 14	4,025,435	0.0005	7,592,051,669	0.9997	620.88	46.11
15	926,849	0.0001	7,592,978,518	0.9999	687.23	27.70
16	914,608	0.0001	7,593,893,126	1.0000	687.99	21.48
18	72,779	0.0000	7,593,965,905	1.0000	760.00	0.00
ABOVE MAXIMUM KEY LENGTH	25,568	0.0000	7,593,991,473	1.0000	840.00	0.00
T O T A L	7,593,991,473	1.0000	7,593,991,473	1.0000	422.29	96.55

*Includes ages determined by interpolation.